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## NEW PUBLIC MARKETS IN NEW YORK

Details of Plans and Structural Features of Market Buildings Now Under Construction—Floors, Stalls, Drainage, Lighting, Refrigeration, Transportation and Delivery—Sanitation, the First Consideration in a High-Class Market.

New York City maintains five markets in Manhattan Borough and one in Brooklyn. Last September it opened four open markets in an effort to reduce the "high cost of living," charging no fee for stalls, but the court recently held that the city had no legal right to maintain these.

There are also a number of so-called "public" markets which are run as private enterprises, the stalls being leased to dealers in all kinds of food materials. These are scattered throughout the residential sections of the city.

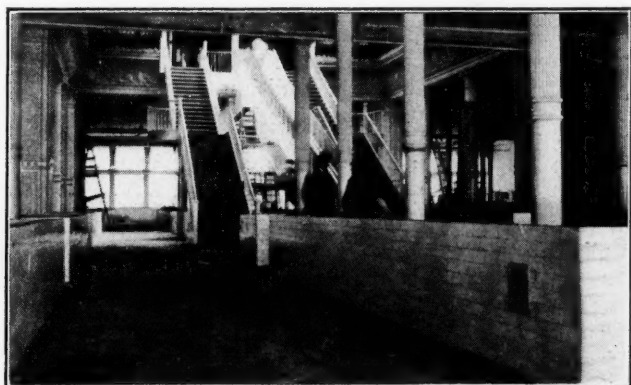
At the present time several large and up-to-date markets are being constructed as private enterprises. Some of these are to take the place of the open-air markets established last summer, while others are opening in new locations. The three markets described in this article are in widely separated parts of the city and will serve different classes of customers. Two of these, in a manner, represent the extremes of markets and conditions in New York. The Harlem market was established especially to cater to those people who come with their market baskets and carry home their purchases, and to those to whom the saving effected is important; Cosmopolitan Garden, with its delivery system and its distance from any large center of population in the city, is at the other extreme. The 149th street market is in a district of large population and near an important transfer point. 23RD STREET MARKET OR "COSMOPOLITAN GARDEN."

The 23rd street market, or, as it is called, "Cosmopolitan Garden," is probably the most complete market in all details of sanitation and convenience in New York City. It occupies the old Stern Brothers' store on West 23rd street, between Broadway and Sixth avenue, and has a frontage of 174 feet 9½ inches, a depth of 197

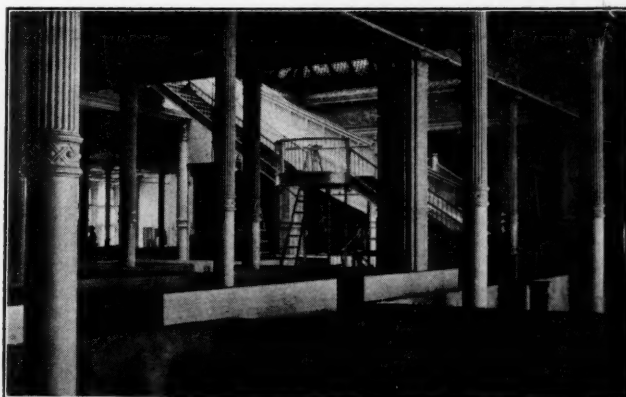
feet 9 inches, extending entirely through the block to 22nd street, and is four stories high. The old structure has been practically rebuilt to make it suitable for market uses. In the basement are refrigerating, heating and incinerating plants and storage space for lessees and for a delivery system. The first floor area is divided into 89 booths and on the second floor are located 60 more. A portion of the third floor will be devoted to a large restaurant and the remainder will be utilized for permanent exhibition purposes or divided into booths. On the fourth floor will be a permanent exhibition of landscape gardening, with a cut-flower department and a horticultural exhibit. The two lower floors open for business on May 1, but the work on the upper part of the building is not yet completed. The booths on the first floor will be given over to dealers in meat, vegetables, poultry, fruit, etc., while those on the second floor will be occupied by dry grocers.

On the first floor (where sanitation is especially important, owing to the kind of supplies sold) a tile floor is in place, which was laid directly on the old wooden floor. Two layers of three-ply waterproof paper, with tar pitch over and between the layers, was first put in place. After an additional coat of hot pitch this was covered with about 2½ inches of 1:3 concrete, reinforced with No. 20 galvanized triangle mesh wire. On top of this was spread about an inch of a 1:2 mixture of sand and cement, in which tile were embedded firmly. White vitreous tile ⅞ inch square were used, with a three-inch tile border and with rounded angle and corner pieces.

The booths on the ground floor are arranged in two double and three single rows, which alternate. These rows run from one front to the other (from 22nd to 23rd



INTERIOR OF FIRST FLOOR, TWENTY-THIRD STREET MARKET.  
View of Aisle, Main Stairways and Escalator. Hose Opening at Extreme Right.



Shows Tile Booth Walls and, at Left, Wooden Stall Partitions.

street) and are divided into units of 1, 2 or 8 stalls respectively, each unit in the double rows making eight stalls and in the single rows one or two. Stalls are also arranged along both fronts, while at the sides are the elevators (nine passenger and two freight), stairways, air spaces and several small booths. In the center are two wide stairways and an escalator, the latter, with a speed of 90 feet per minute, having a capacity of 110,000 people per day. There are entrances on both fronts.

The passageways between the stalls are regularly 8 feet 8 inches wide, though the nosing of the counters is allowed to project 2 inches from each stall, which reduces the available width to 8 feet 4 inches. Two of the aisles, however, are but 7 feet wide.

The floors of the booths are constructed in a somewhat different manner from that employed in the construction of the passageways. Over the tarred paper, laid as before described, was spread about  $1\frac{1}{8}$  inch of asphalt mastic (the layer was thinner near the drains in order to provide a slope), a mixture of sand, grit and asphalt. This is waterproof and has advantages over concrete in being slightly elastic to the tread.

The walls of the booths are built up to the height of 2 feet 8 inches of 4-inch hollow terra cotta brick. On the outside the walls are finished with white vitreous tile; on the inside they are given two coats of cement plaster. All angles are rounded off.

Especial provision is made for cleaning both floors and stalls. Drains, set about 2 inches below the main floor level, are placed at all intersections of alleys and aisles and the floor is sloped toward them to insure better drainage. For a radius of about 6 feet around the drains, this slope is quite heavy, but farther away is comparatively slight, being just enough to keep water from standing on the floor.

The drains themselves are about a foot square and are sunk below the floor level, the resulting depression being filled by white rubber mats, which resemble the floor in appearance. Underneath the rubber mat and forming the cover of the drain is a roughened iron plate held in place by a screw. Below the plate are two strainers,

the lower of which is the finer. In constructing the inlet a wooden box was set on the floor beams and around the inlet and pipe. The space between the box and the inlet was then filled with concrete in the bottom and pitch on top.

Inside the booths, drains of the same size and style as used in other parts of the building, except that the rubber mats are omitted, are built in the floor. These are so placed that each drains an area having a radius of about 14 feet. The slope to the drains is less than that of the main floor and the drains are set only about  $\frac{1}{4}$  inch below the floor level.

The units, which in some cases contains eight booths, are divided by wooden partitions set on iron legs let into the floor. These partitions obey the general rule that all fixtures must clear the floor by 6 inches or more, so that cleaning will be easy. The stalls on the ground floor vary considerably in size and shape, but the average is about 12 feet by 17 feet for the groups in the double rows and 12 feet by 20 feet for the single stalls. The rent for the downstairs booths will vary from \$25 to \$300 per month, depending on location and size.

Water is provided to every booth on the first floor and those in which business demands it will be supplied with both hot and cold water. Hose connections are also set in booth corners, being so spaced that with a 50-foot length of hose all parts of the market can be reached for cleaning. They are located inside the booths and are reached through a small door set in the booth wall, which obviates the necessity of having them in the passageways, where they would be unsightly as well as in the way.

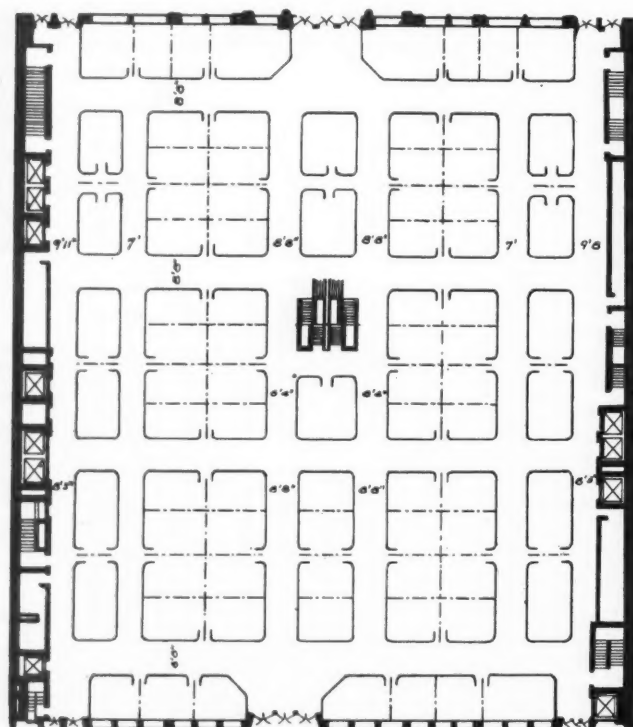
The old wooden floor is still in place on the second floor and will be used in its present condition. The 60 booths on this floor are mostly in two sizes. Those around the wall average 8 feet deep, with 16 to 20 feet of front; the others, occupying mainly the central part of the floor space, are about 12 feet wide and 20 feet or 24 feet long. The booths on this floor are built of wood. Nine passenger elevators, a moving stairway and eight other stairways communicate with the ground floor. The two main central stairways are each 5 feet wide.

Artificial lighting is by overhead incandescent lamps, current for which is furnished by the market. A large skylight located directly over the first floor stairway and the windows fronting on the two streets give ample light during the day.

There are two conduit systems carrying current for power and light to every booth. While current for ordinary lighting uses is furnished by the market, that for power uses or display lighting is brought through the other conduit system to a meter and is paid for by the consumer. Individual telephones, connecting with a central station outside the building, are furnished to each stall.

The building is heated by low-pressure exhaust steam from four Babcock and Wilcox water tube boilers set in the basement. These, in addition, furnish steam for heating a 12-story office building in the same block and also furnish steam for the ice machine. Ceiling coils are used mostly in heating, though some radiators will be used. The building is equipped with a very complete sprinkler system for fire protection. Water for this is supplied from storage tanks on the roof.

In the basement is the ice machine, which is of the compressor type, with a capacity of 50 tons per 24 hours. An ammonia machine supplies ammonia to a brine tank 24 feet square and 5 feet deep, lowering the temperature of the brine to about 20 degrees F. The brine is then pumped through a grid of distribution pipes which are suspended from the basement ceiling. The main pipe is 6 inches in diameter, but decreases in size as the cross-



⊠ Elevators

GROUND FLOOR PLAN, TWENTY-THIRD STREET MARKET.



pipes branch off, the final distribution being through 1¼-inch pipes. Of the same size and paralleling these supply pipes are the return pipes which bring the brine back to the tank. All the supply pipes are insulated with a covering of cork about 2 inches thick. The brine is supplied to the first and second floors.

Pipes will be taken up through the floors to coils in any booth using the brine. In the booths the brine passes through a meter which measures the amount and over a recording thermometer which records the temperature. Payment is then made on the basis of equivalent tons of ice used. Refrigeration is accomplished by circulation through coils. A coil is also placed in a drinking water tank which supplies water to the drinking fountains on the first two floors.

On the first floor enough storage space in refrigerators is provided to hold about a half day's supplies for the average merchant or butcher. In the basement is a large cold storage room where supplies may be kept, and brought up by elevators as needed. Another space in the basement is provided for dry storage and there are also individual stalls where the dealer in fruits, etc., may wash his goods or otherwise prepare them for market.

As the ceiling of the first floor is about 20 feet high, no provisions for ventilation have been made here. For the other floors the old store system, which draws air from the basement, is still in use.

An incinerator made by the National Incinerator Co., of New York, is placed in the basement. This has a capacity of one barrel per charge and is expected to care for all rubbish and garbage collected in the market.

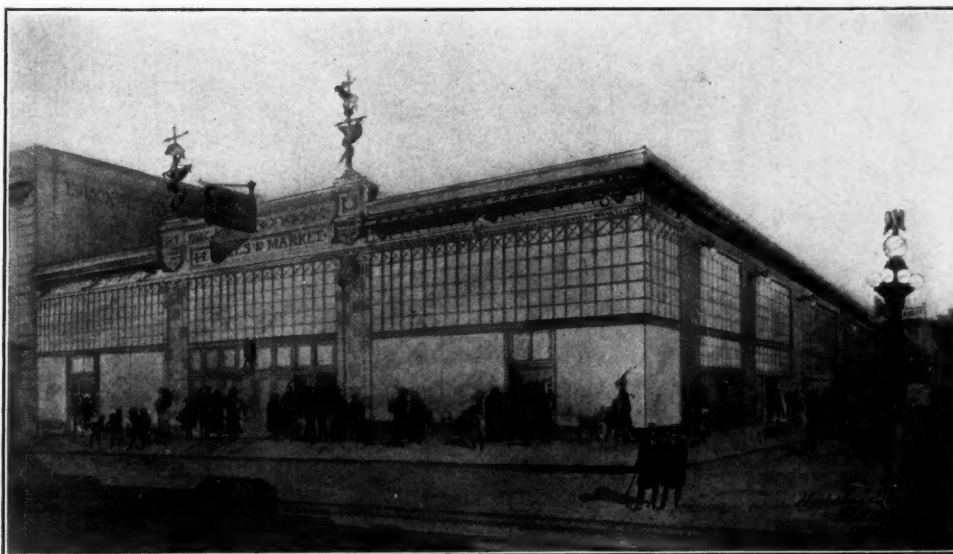
A trucking company has taken the contract to deliver to customers the goods or supplies sold at the market. A book containing 150 coupons is sold to the stallholder. When he wishes a bundle delivered he places the name and address of the consignee and a coupon from the book on the bundle, which is then taken to the basement, classified as to location in city and recorded. Delivery will be by automobile truck, the city being divided into zones, to each of which certain trucks will be assigned. Sixteen trucks, bearing the name of the market, are now ready for use, and more will be added as needed.

The advertising is also in charge of the market management. Ten per cent of the rental paid by each tenant will be paid out in regular advertisements of the market.

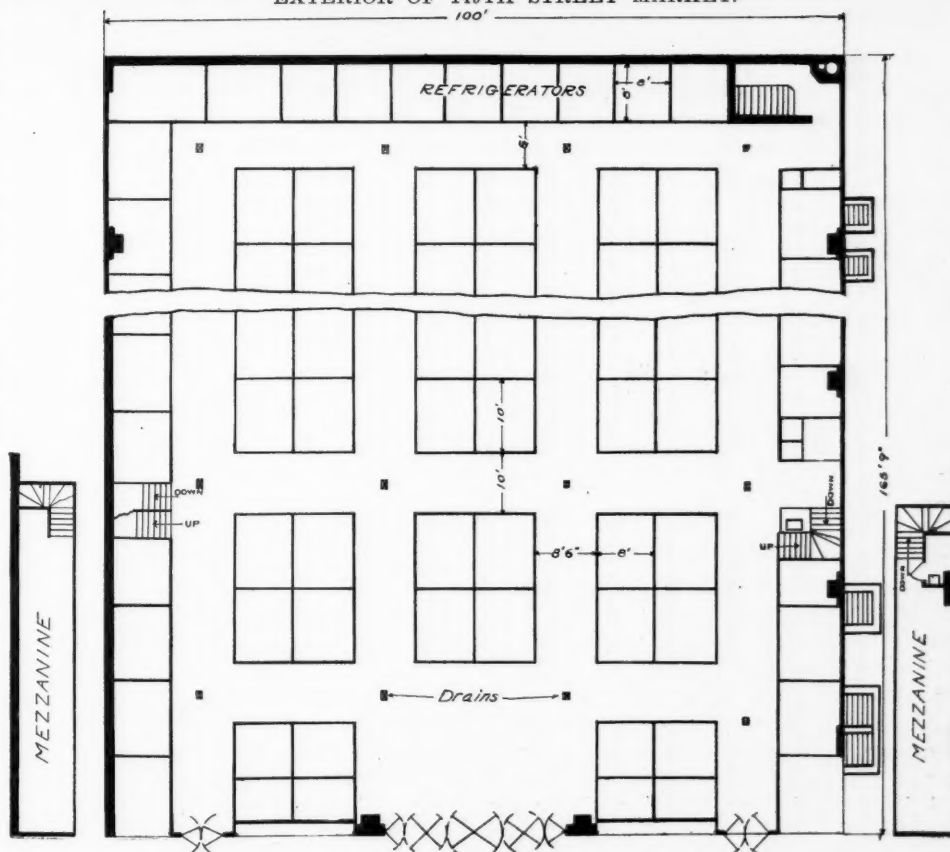
The market was the idea of Maurice M. Berger. The architects were Starret and Van Vleck, of New York, and the contractors were Rheinstein and Haas.

#### THE 149TH STREET MARKET.

A market which is being built at 149th street and Cortland avenue near Third avenue, known as "The 149th Street People's Market," will be exceptionally complete and up-to-date in all details when completed. It is one story high and the outside dimensions are 100 feet by 165 feet 9 inches. The outside finish is glazed brick and glazed terra-cotta tile and the inside will be finished entirely with glazed brick. Plate glass show windows will front on 149th street and one window on Cortland avenue; Springfield-Bayley windows (steel frames supporting glass panes) are used for the entire upper half of the outer walls. The roof is steel girder construction,



EXTERIOR OF 149TH STREET MARKET.



FLOOR PLAN OF 149TH STREET MARKET.

covered with tarred felt, five thicknesses of which is laid on roof sheathing, Barrett's specifications.

Along each side of the interior, against the wall, is a row of stalls, each stall being 8 feet deep and having a 10-foot front. At the middle of the front, facing on 149th street, is the main entrance. Just inside are located two units of four stalls each. At the opposite end of the building are the refrigerators. The remainder of the interior is subdivided by alleys 8 feet 6 inches wide and spaced 16 feet apart (24 feet 6 inches center to center) and cross aisles 10 feet wide and 20 feet apart, except that the center aisle is omitted. The resulting enclosed areas will be 16 feet by 20 feet and each of these is divided into 4 stalls, each 8 feet by 10 feet. In all, there are 100 of these stalls in the market, almost all of them being of the standard 8 by 10 size.

At the end near the refrigerators are the stalls for the butchers, all of which are of the standard size. Provision is made for handling and transporting the meat by means of overhead trolleys, which have branches running to each of the refrigerating units and separate branches running from the refrigerators to each of the stalls. There are eight refrigerators, each about 8 feet square.

At present the stalls are not provided with counters or other fixtures. Within limits, the occupants may have these built to suit their own requirements or ideas, certain restrictions as to color, height and construction features being placed on them. As the entire market will be flushed out every day, all fixtures, counters, etc., must have a floor clearance of 6 inches to allow thorough cleaning under them. All fixtures must be painted white and must not be of more than a specified height (about 4 feet). Though there is a market carpenter, the stall occupants may have the work done by anyone, provided the market standards are followed.

The floors of the market are of two-course concrete. Reinforcement of wire mesh and self-centering triangle mesh is being used for the lower course, which is of 1:3:5 cinder or stone concrete. On top of this course is one inch of 1:2 mortar, floated, troweled smooth and treated with "Master Builder's Concrete Hardener" (specification A) to render the floor dustproof. Both courses are cut entirely through, dividing the floor into 5-foot squares. There is a concrete base 6 inches high around all walls and brick piers. All corners and angles are rounded to make cleaning easy. The entire building is provided with metal ceiling under roof, stairways and mezzanines.

At each intersection of alley and cross aisle, a drain, having two strainers, one above the other, of iron and having 1-32 inch openings, and a removable solid cover, is placed in the floor, which, to aid in flushing out, is given a general slope of 8 inches in 100 feet continuously from one end of the building to the other. Water is piped to six hose connections, placed in convenient locations, from each of which hot or cold water can be drawn. There are also water connections at all fish stalls. Both hot and cold water faucets have hose connections. The water supply is so arranged that water is convenient to all stalls and also so that separate meters can be installed to reach fish stall and restaurant. A 300-gallon hot water tank is provided, the water being supplied from this through a 1¼-inch main.

Ventilation is by means of two 5-foot suction fans at openings in the roof, which can be closed when not in use. No provision is made for heating the market and this necessitates protection of all water pipes against freezing. There will probably be a refrigerating plant but plans have not yet been completed for it. Toilet conveniences are provided in the basement.

Both gas and electric lighting will be used. Bracket lights are attached to the columns which support the roof at the center of each unit of four booths and, in addition, lamps are suspended from the ceiling at each intersection of alley and cross aisle and also midway between these intersections.

Screens will be placed on all doors and windows and over all other openings. No provision has as yet been made for disposal of waste, other than through the city collection department, but plans are now being made for an incineration plant and this will be added later. No space in the market is provided for storing food material other than in the refrigerators.

A market master, who will spend most of his time at the market, will be in charge. He will see that complaints of customers are adjusted and that market rules are obeyed. In the basement there will be several novel features, including a cooking school and a babies' room which will be in charge of a trained nurse.

Rentals will range from \$37.50 to \$75 per month per stall, the higher rates being charged for those booths near the entrance, while the price for the others will decrease according to their distance from accessible or desirable locations. The butchers' stalls, with refrigerator privileges, will rent for \$50 per month per unit or \$200 for a unit of four stalls. This price includes all porter and other services, light and, in some cases, water.

The market is being built by the People's Market, Inc., of which Samuel Jacobs is president. Heidelberg and Levy of New York are architects.

#### THE HARLEM MARKET.

The Harlem market, which has just been completed and put in service, is located at 128th street and Third avenue. This is in the center of a large area populated largely by foreigners and in a neighborhood where open air markets have already been successful.

The market building, which was formerly used as a store, is a one-story wood building about 40 feet by 80 feet. To render it suitable for market uses, the old building was partially reconstructed and refrigerators added. Within the main room, arranged along each side wall and in a double row in the middle, are 20 stalls which vary in size from 6 feet by 9 feet to 14 feet by 18 feet. In the extreme rear are three refrigerators, each about 7 feet square. As no means for moving large pieces of meat from place to place in the market are provided, a small cutting room is located near the refrigerators, where the meat may be cut into salable pieces.

The occupants build their own stalls, counters, fixtures, etc., renting only the floor space, but are limited by the market regulations, which require the booths to be less than 4 feet high and to be painted white. No especial provisions are made for cleaning, though the floor, which is of wood, will be kept oiled and sprinkled with sawdust and will be swept once a day. Lessees clean their own stalls.

Water is supplied by two taps to sinks in the rear of the building, but no connections are made to any of the stalls. Unshaded drop lights are hung from the ceiling over the stalls. No ventilation is provided except through an opening in the roof, which may be regulated as desired. There is no heating plant and no provision for the disposal of garbage or waste.

The rentals average about \$25 per month per booth, though some of the choicer positions near the front bring double that amount. The price includes porter and watchman service, light and water charges, etc. The market was designed and built by Harry Golding, who also acts as market-master.



## JITNEY OMNIBUS LEGISLATION

### Analysis of Regulations in Eleven Cities—Requirements for Licenses—Regulation of Operation—Digest of a Typical Ordinance.

By ANDREW LINN BOSTWICK.\*

The advent of the jitney omnibus as a factor in local transportation has given rise to a number of problems, and it is becoming common for municipalities to license and regulate the motor omnibus business in general. Jitney legislation has in a few cases been framed with the apparent object of abolishing the business entirely; as a general thing, however, the policy has been to impose reasonable and legitimate restrictions. Careless and irresponsible drivers, unsafe machines, traffic law violations, overcrowding, indignities to female passengers, lack of liability in case of accident, arbitrary changes in routes—evils such as these make regulation of the jitney desirable.

The following summary is based on the laws in force in Pasadena, Cal.; Fort Worth, Tex.; Oakland, Cal.; Joplin, Mo.; Oklahoma City, Okla.; Boise, Idaho; Spokane, Wash.; Los Angeles, Cal.; San Antonio, Tex.; Denver, Colo., and St. Louis, Mo.

**Requirements for License.**—In general, a number of conditions must be complied with by applicants for licenses. In Pasadena the applicant must state the type, horsepower, factory number and seating capacity of the machine to be operated; the name and age of the driver and the termini between which the car is to be operated must also be specified, and if any alterations have been made to adapt the car to jitney service, these must be described. The requirements in Oakland and Fort Worth are very similar to the above. Oakland, Los Angeles and San Antonio specify an 18-year age limit for drivers; Boise and Spokane, 21. References are sometimes required of applicants, as in Spokane. A knowledge of the traffic laws is usually demanded. Spokane requires a medical examination of all applicants, and in this city drivers must be able to speak English. In Los Angeles the applicant must state whether he is married or single.

The license requirements in the cities under consideration are, broadly speaking, very much the same (with the exception of the license fees, which are compared in a later paragraph).

It is customary to require some sort of bond or insurance for every jitney car. The table below does not go into details. It merely shows the amount necessary in the various cities mentioned:

#### Bond or Insurance Policy Required of Jitney Operators.

Pasadena .....	{ \$5,000 for injury to one person. 10,000 " " " all in any 1 accident.
Fort Worth .....	{ 5,000 " " " one person. 10,000 " " " all in any 1 accident.
Oakland .....	{ 1,000 " property damage in an accident 10,000.
San Antonio .....	{ 5,000 " injury to one person. 10,000 " " all in any 1 accident or 50,000 " liability for not over 5 cars. or 100,000 " " any number of cars
Joplin .....	{ None mentioned in ordinance.
Boise .....	{ 10,000 for 1 or 2 cars. 20,000 " over 2 cars.
Los Angeles .....	{ 5,000.

**License Fees.**—Licenses are usually granted and revoked by the legislative body. In Los Angeles this power lies with the police authorities. The fees charged in the cities under consideration vary greatly, and reflect clearly

the degree of favor or disfavor with which the city fathers regard the jitney. The tabulation below gives the license fees:

	{ Vehicles holding 5 persons or less, including driver .....	\$30.00
	{ Vehicles holding 6 or 7 persons, including driver .....	35.00
Pasadena .....	{ Vehicles holding 8 to 15 persons, including driver .....	45.00
	{ Vehicles holding 16 to 29 persons, including driver .....	55.00
	{ Vehicles holding 30 or more persons .....	75.00
Fort Worth .....	{ Vehicles holding 5 persons or less..	10.00
	{ " " 6 or 7 persons....	20.00
	{ " " 7 or more persons.	30.00
Oakland.....	{ Each vehicle .....	60.00
San Antonio .....	{ Vehicles having 7 seats or less....	25.00
	{ For each seat over 7.....	3.50
	{ For holding 5 persons or less.....	10.00
	{ " " 6 or 7 persons.....	15.00
Joplin .....	{ " " 8 to 12 persons. ....	20.00
	{ " " 13 to 16 persons. ....	25.00
	{ " " 17 to 25 persons. ....	35.00
	{ " " 26 persons or more....	40.00
Oklahoma City (Charge according to capacity).....	{ Minimum fee .....	50.00
	{ Maximum fee .....	150.00
Boise .....	{ Vehicles holding 5 passengers or less .....	75.00
	{ " " 6 to 10 passengers. ....	100.00
	{ " " 10 to 20 passengers. ....	150.00
Spokane .....	{ Original license .....	2.50
	{ Renewed .....	1.00

Los Angeles apparently exacts no license fee to correspond with those charged in most cities. No fee is required in St. Louis as yet. Oakland charges 50 cents each for drivers' badges; in Joplin there is a fee of \$1.00 for a driver's license and \$2.00 for the license plate. In Los Angeles drivers are given identification cards, which must be available at all times.

**Regulation of Jitney Operation.**—The actual operation of jitneys is regulated at length in most of the ordinances considered. In some cases violation of certain rules automatically revokes a license. Conviction of violation of traffic laws acts in this way in Joplin and Spokane, and in Joplin conviction of drunkenness has the same effect.

In Oakland the ordinance provides for non-skid tires on cars, adequate signs, a 5-cent fare, lights in closed cars at night and rigid adherence to routes (except under certain special conditions). Such regulations are typical. In Pasadena trailers on jitneys are prohibited. Speed is often specially restricted and overcrowding is almost always forbidden. Drivers are often required to wear badges. Routing and re-routing of cars is usually under city supervision. In Oklahoma City jitneys must not run on streets occupied by car tracks, except in the fire limits for distances not to exceed two blocks. The stoppage of cars is generally regulated.

The San Antonio ordinance contains 29 rules governing jitney operation. In addition to the regulations found in most cities there are those prohibiting the soliciting of fares, improper language and conduct, the display of advertising matter on cars, conversation with passengers by the driver, and the use of raised umbrellas by passengers on the front seat. The ordinance also provides that stops must be made at points 50 feet from the near side of crossings.

The Denver ordinance differs radically from those already considered. In Denver no person or corporation may operate jitneys without a franchise. The city would not be likely to grant a franchise to the owner of one or two cars, so that the effect of this ordinance will probably be to exclude all jitneys, unless they are operated by a company on a large scale. The San An-

\*Municipal Reference Librarian, St. Louis Public Library.

tonio ordinance also declares that a franchise is necessary for jitney operation.

In St. Louis, while an ordinance is pending, the present regulations are those which were recently drawn up by the director of streets and sewers. The rules are comparatively liberal, and provide as follows:

All cars must be registered, with details as to capacity and routes.

Cars must not carry more than two passengers in excess of the rated seating capacity.

No person may ride outside the car body.

Cars must stand at the curb while loading and unloading.

No racing for passengers is allowed.

Drivers must comply with the State chauffeurs' license law, and carry badges.

Cars must be inspected as to general condition at the municipal garage every two weeks, no charge being made for this.

#### Digest of a Typical Jitney Ordinance.

(Pasadena, Cal., Ord. 1500, 11-21-14.) Section 1. Terms are defined. Sight-seeing cars are exempted.

Section 2. All motor buses must be licensed. Applicants must state:

(a) The type of car to be used.

(b) The horsepower.

(c) The factory number.

(d) The State license number.

(e) The seating capacity according to trade rating. If the car has been converted from another type, the application must also contain a statement of its carrying capacity in pounds or tons, seating capacity as adapted, and the method and materials used in the adaptation.

(f) The name and age of the person to be in charge as driver, and the number of his chauffeur's license.

(g) Terminal of proposed route.

(h) Schedule proposed.

The city clerk refers the application to the commissioner of public safety, who refers it with his recommendation to the city commission. Licenses are authorized by the commission, and issued by the city treasurer.

Section 3. This section states the license fees, which are from \$30 to \$75 per annum. (See tabulation on this subject.)

Section 4. This provides for license revocation under certain conditions. It is the duty of judges to recommend revocation where they deem it necessary.

Final action is taken by the city commission in these cases.

Section 5. This relates to license fees under a former ordinance. Not relevant.

Section 6. This section makes unlawful the following:

(a) To operate a motor bus without a license.

(b) To deviate from termini and schedules specified in the application.

(c) To operate on certain specified streets (evidently a traffic regulation only).

(d) To stop for passengers with the car more than 2 feet from the curb.

(e) To operate without license numbers plainly displayed.

(f) To haul trailers.

(g) To drive with anyone on the running board, door, fender, etc.

(h) To operate without taking out an insurance policy of \$5,000 to \$10,000 (as specified in the tabulation).

(i) To make alterations in the car's type without permission from the city.

(j) To drive at night unless the interior of the car be lighted.

Section 7. This has only local importance. It relates to loading and unloading passengers at certain corners, etc.

Section 8. Penalties are provided for violation, the maximum being \$100 fine and 30 days' imprisonment.

## CONCRETE PARK SEATS

Details of Design and Construction of Durable Seat  
Being Constructed by Park and Recreation  
Department of Boston, Mass.

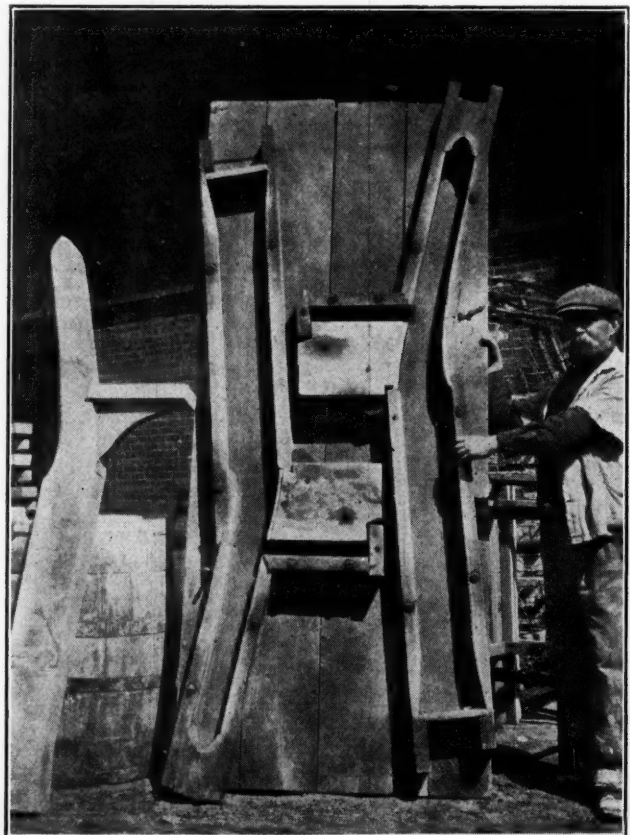
BY W. B. CONANT.

The Park and Recreation Department of Boston, Mass., is actively engaged in molding concrete structures of various kinds, for park and other public uses, at the department's construction headquarters in Franklin Park, Dorchester. The work is in general charge of engineer C. E. Putnam.

An important part of the output at the present time is the casting of several hundred reinforced concrete frames for stationary seats which are being erected in the various public grounds of the city, replacing wooden seats and wood and iron benches in service heretofore. It is planned to install this standard type of seats in all the city's public grounds.

The seat consists of a reinforced concrete frame, comprising an upright standard, with a back support receding at an angle of 18 degrees and a seat support sloping back  $1\frac{1}{4}$  degrees from the horizontal and resting on a bracket, the whole being in one piece. The total height of the frame is 8 feet. These are cast in molds constructed on the premises of spruce and southern pine joists with a plank bottom, each mold being made to cast two concrete frames at the same time. (See photograph.)

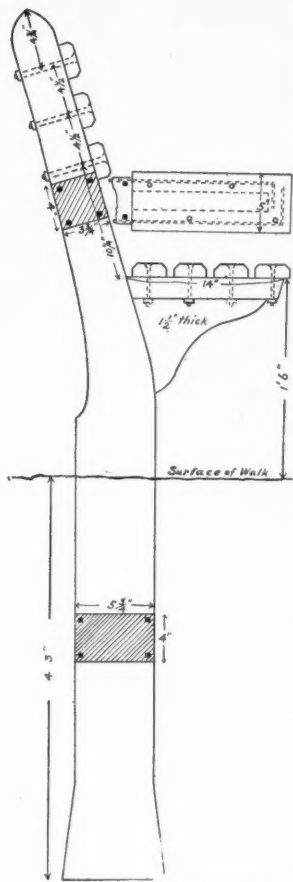
The concrete is mixed in the proportion of one part Portland cement, one part coarse sand and one part fine sand. The surfaces are smoothly finished, with beveled edges above the seat, and present a handsome appearance, besides being very durable. Running from top to bottom of the upright portion are four twisted steel rods  $\frac{1}{4}$  inch in diameter, embedded in the concrete about  $\frac{1}{2}$  inch from each face at each corner.



DOUBLE MOLD FOR FRAME.



The cross-section dimensions of that part of the upright standard above the seat are  $3\frac{3}{4}$  by 4 inches, increasing below this to  $5\frac{3}{4}$  by 4 inches at a point about 6 inches above the ground level when the frame is set, and broadening to a width of 8 inches in the bottom 7 inches.



PLAN OF CONCRETE FRAME.

The horizontal portion of the frame, to which the seat slats are attached, extends 14 inches from the upright, is 5 inches wide and 2 inches thick, and contains two  $\frac{1}{4}$ -inch rods, one near each edge and with 3 inches of the front end turned at a right angle. At the other end these rods enter the back piece of the frame and turn downward in it 10 to 18 inches, the distance being determined in part by the way the steel rods cut to advantage.

A concrete bracket  $1\frac{1}{2}$  inches thick, 12 inches on the horizontal and 9 inches on the perpendicular edge, with curving front lines, supports the seat. This bracket is reinforced with four  $\frac{1}{4}$ -inch twisted rods, their ends interlaced.

The frames are designed to be planted in the ground a depth of 4 feet 3 inches, making the height of the slatted seat 18 inches above the level of the ground. The flare in the bottom of the frame is to give it a securer hold in the ground and to prevent its being heaved by frost.

In the frame, when molded, are cast three round holes in the back, for  $\frac{3}{8}$  inch bolts by which three back slats are attached, and four  $\frac{3}{8}$ -inch holes in the bracket for attaching the slats of the seat, the latter holes being in a staggered position.

The slats are of seasoned white oak,  $3\frac{3}{4}$  inches wide and  $1\frac{1}{4}$  inches thick, beveled on the two outer corners, and are attached to the frame by means of brass or galvanized iron screw bolts, the screw end sunk well into the wood, and the nuts fastened behind the back and underneath the bracket support. The seat slats are spaced



CONTINUOUS SEAT CONSTRUCTED WITH CONCRETE FRAMES.

at equal intervals of  $\frac{3}{8}$  inch both between the slats and between the rear slat and the concrete frame, to provide space for drainage, and for the expansion of the wood. The front slat overhangs  $\frac{1}{2}$  inch.

Individual benches, i. e., those not ranged in continuous line along a walk, are generally 8 feet in length, the slats being fastened to three frames set at 3 feet  $5\frac{1}{2}$  inches centers between the middle and end frames.

In certain portions of the public grounds, notably in the Marine Park, South Boston, and on Boston Common, continuous seats have been erected. The department has recently erected on Boston Common, around a granite band pavilion as a center, a circular line of benches, continuous except for openings to accommodate brick walks which converge on the pavilion. The seats form a circle almost 1,000 feet in circumference, with a 12-foot brick walk running completely around in front of the seats. Within the area of the circular walk the space is graded level with small beach pebbles, which gives an attractive white surface and permits of people crowding around the bandstand without destroying any grass lawns, and also of easily keeping the area clean and free from litter.

The constructing of the frames at the headquarters is conducted in connection with the making of other concrete structures, such as an ornamental balustrade which is later to be erected along the water front at Marine Park. The molds are filled with the concrete, which is packed closely about the reinforcing rods, and after 4 or 5 hours the cast is "stripped," i. e., the sides of the molds are removed and the cast is allowed to remain on the table at least 48 hours so as to thoroughly harden and dry.

## STREET LIGHTING IN YOUNGSTOWN

City, After Having Estimate Prepared for Municipal Plant, Receives and Accepts Bid for More Advantageous Ten-Year Contract.

BY WILLIAM A. MASON.

Results of an extremely interesting and significant nature have developed from the movement for a modern street lighting system for the city of Youngstown. Youngstown's streets have been lighted for years by old-fashioned electric arc lights, which have been very unsatisfactory. Merchants and business men have been agitating for some time for "white way" lights on the downtown streets, and after visits by city officials and members of the merchants' association to the neighboring city of Akron, which has recently installed an up-to-date street lighting system, the movement took definite form by the retention of H. Whitford Jones & Co., of Cleveland, lighting experts, who had charge of the installation of the Akron system.

The experts were instructed to prepare plans and estimates for a municipally-owned light plant and system for furnishing equipment and current for street lighting of the most up-to-date kind. After careful survey of the situation and the needs of the city, the lighting engineer made his report with complete estimates as to the cost of street lights operated by a municipal plant. Inasmuch as the franchise under which Youngstown's streets were lighted had three years more to operate, Jones recommended that, before the city proceeded with a municipal plant, competitive bids be requested from private corporations on specifications based on the requirements for the street lighting system in his municipal plant report. This recommendation was adopted by the city council, and

on Jan. 29 bids were received for the contract to furnish and maintain a modern street lighting system.

There were two bidders—the Youngstown & Sharon Railway Co., holders of the present street lighting franchise, and the Mahoning County Light Co., which had been granted a franchise a year before to operate an electric light and power plant in Youngstown.

Bids were asked for terms of three, five, eight and ten years' service. The service to be furnished includes 3,200 100-candlepower bracket lights for the residential section, 243 1,000-candlepower, and 73 600-candlepower "white way" lights on ornamental standards for the business section. All installations, fixtures and apparatus were thoroughly and plainly set forth in the specifications for the work, so that no uncertainty existed as to what was desired.

When the bids were opened it was found that not only was the Youngstown & Sharon Railway Co. the lowest bidder, but that its figures (which the lighting expert said were the lowest he had ever received in his experience) were lower for the ten-year contract than those for which it had been estimated the municipal plant could furnish light. The Youngstown & Sharon Railway Co. officials say that their bids were based on actual cost of the service.

A comparison of the annual cost for each type of light under the ten-year bid of the private company and the estimate of the yearly cost of the light with a municipal plant, which it was stated would be operated without profit to the city and without providing any means of establishing a sinking fund to take up the bonds for the municipal plant, follows:

	Low Bid.	Municipal Plant.
100 C. P. bracket lights.....	\$13.55	\$15.40
60 C. P. bracket lights.....	12.30	13.56
1,000 C. P. all-night lights.....	66.33	79.90
1,000 C. P. 12 o'clock lights.....	47.36	51.51
600 C. P. all-night lights.....	60.16	61.57
600 C. P. 12 o'clock lights.....	44.10	40.00
Total yearly cost.....	\$59,202.81	\$66,333.89

The Mahoning County Light Co. bid aggregated \$65,512.23 for ten-year service, and this also is lower than the estimated cost of the service with a municipal plant, but is over \$6,000 higher than the bid of the Youngstown & Sharon Railway Co. for the same service. The latter company was also low bidder on the service for three, five and eight years.

The cost to the city during the year 1914 for its street lighting with 738 old arc lights was \$48,818.78. Under the new system it is proposed, in the bid of the Youngstown & Sharon Railway Co., to light the city with 3,512 modern lights at a net cost to the tax-payers direct of \$49,475.81. This is an additional cost of but \$657.03 with the new system of lighting under which 50 miles more of streets are to be lit. Sixty per cent of the cost of the white way lights are to be paid for by assessment of abutting property owners, at a rate of forty and sixty cents per foot front.

Under the specifications under which the bids were received, the entire cost of the installation, fixtures and apparatus is to be paid by the lighting company, which agrees to have all lights in operation within a year after the contract is awarded. The specifications completely safeguard the city in its right to require the installation of any improved lights that might be invented during the period of the contract, the readjustment of rates for any such improvements to be determined by arbitration.

Permission is granted the city to put street corner signs on any of the lighting poles. The bracket lights in the residential section are to extend out over the street

four feet from the poles on ornamental brackets and six feet at the corners so as to be in alignment. In some streets where there is heavy foliage the lights will be strung on wires in the center of the street. The lights on the residence streets are to be from 120 to 240 feet apart, depending on the width of the street and the amount that it is traveled.

The white way lights on the business streets are to be 50 to 55 feet apart. The lighting company is to remove all present lights free of cost and the new white way lights are to all be in use 180 days after the contract is let. The wires are to be underground in the white way district. The ornamental standards for the white way lights will be about 13 feet high, and the specifications require that they shall be painted once a year. Nitrogen tungsten incandescent lights are to be used in the residence streets, and the flaming arcs are to be used on the white way.

The streets are to be lighted from a half hour after sunset to a half hour before sunrise on what is known as the 4,000. hour schedule, and on the white way 73 lights will burn all night and 243 until midnight.

All bridges in the city are to be lighted completely with nitrogen tungstens the same as used on residence streets. All lights are to be placed (under the direction of the consulting engineer, under the director of service) where they are needed and not where some individual with "pull" thinks he wants them.

The lighting company furnishes a bond of \$25,000 to protect the city from all damages from accident or any other cause in the installation or operation of the lights, and the company is also placed under a penalty of \$2.00 for each resident street light and \$3.00 for each white way light that is not installed by the time agreed in the contract.

The use of checking devices by which the city can keep a record of the amount of current used is authorized in the specifications, and also provision is made for testing the candlepower of any lighting at any time, and a penalty is provided for lights not giving the required candlepower and for fluctuation in lights.

In view of the low bids from the private companies, the lighting expert recommended that the city abandon the plan of attempting to build a municipal plant and enter into a ten-year contract with the Youngstown & Sharon Railway Co. for the service; and on February 15th the city signed a contract with this company, which expected to begin work on the excavation within a few weeks.

#### PITTSBURGH MOTOR REGULATIONS.

Beginning May 1st, motor traffic regulation drawn up by Charles S. Hubbard, director of public safety of Pittsburgh, Pa., will be enforced. Because of an increasing number of fatalities, the new regulations are made much more drastic than previous ones. To assist in enforcing them 20 new men will be added to the motor cycle squad for the sole purpose of controlling speeders.

The maximum speed allowed is 24 miles an hour. Cars must not turn between street intersections; must stop only close to the curb and headed in the direction of traffic, and must not use blinding lamps. "For hire" cars and taxicabs cannot stand in front of or adjacent to cafes or theaters, but may be parked (from 6 p. m. to 6 a. m.) at ten designated places, from two to five cars at a place, a total of 33 cars being thus accommodated. No automobile may stand at one place (other than those designated) for more than thirty minutes, and moving from one location to another at intervals to dodge this rule will not be permitted.

Four streets are designated as "one way" streets for all vehicles.



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APRIL 29, 1915.

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## Public Markets.

The public agitation of last year, occasioned by the startling rise in prices of food materials, led to a demand in many cities for markets in which the growers could retail their produce personally, without the medium of the middleman. Several of these markets were described in a general way by Municipal Journal. Most of them were the result of hastily made plans, and many consisted only of designating parts of public streets in which farmers could, for a nominal fee, sell from their wagons.

There is another kind of public market, which may be either a municipal or private enterprise and consists of providing under one roof a number of stalls or booths which can be rented at much less than the cost of a store, and offers to customers a number and variety of dealers reached with a minimum of walking. Here farmers and small dealers can reach a large number of customers and benefit by refrigerators, light and other conveniences found generally in only the largest stores.

A considerable number of cities have built and others contemplate building such markets. For the benefit, especially of the latter, we present in this issue descriptions of the more essential features of some of the latest plans for such markets. The one first described is especially commended for its attention to details calculated to secure and maintain the most sanitary conditions.

## Efficiency Work in Chicago.

The report of the Civil Service Commission of Chicago for the year 1915 has just been made public, and is of especial interest because of the fact that the commission takes occasion to review its work during the past seven years in developing efficiency in the public service. We have, on different occasions, referred to the work done by the efficiency division of this commission, which has a record of securing more practical results than perhaps are obtained in any other city. It has worked out a scheme of employment in the municipal departments of which the essentials are standards of employment; correct classification; grades within classes; uniform salaries; defined lines of promotion based upon duties and responsibilities; correct organization, system and method; measured service; cost figuring of men, material and machinery, and individual and group efficiency. The effort is to obtain the maximum result for a given expenditure, and not merely to stimulate individual industry. The evolving of a practical system has been one of considerable difficulty and occupied years of unceasing effort, but the commission feels that during the past year or two it has produced practical results which must be evident to all.

For standardizing employment it believes that duties, responsibility and authority definitely and permanently defined form the only rational basis. Without fixed standards it is not possible with uniform certainty to obtain a competent eligible, to measure his efficiency or to adjust his compensation or equitably provide for his promotion or advancement. The original grading system divided each class of the service into ten grades based entirely upon salaries, which was adopted from the federal service. This grading was very unsatisfactory, and seven years ago 98 per cent of the employees were out of grade. Gradually, however, the commission has evolved a system of grading based upon duties, and today less than 1 per cent of the 17,000 employees in the classified service are out of grade. Chicago is believed to be the first city which has adopted a grading based upon duties, but this is now the standard for practically all of the newer services in the country and the older ones are working toward it.

Lines of promotion from grade to grade in every class of service are clearly defined, assisted materially by the adoption of a standard scheme of titles based not only upon the character of work performed, but upon the degree of the responsibility and authority thereof. Promotion presupposes change of duties and increased responsibilities, and can be had only as a result of promotion examination. But in order that increased proficiency in the performance of the same duties within a grade may receive proper recognition, grades within classes are divided into salary groups. Advancement from a lower to a higher group within a grade is without examination and is based on seniority and efficiency. Experience in the last few years has demonstrated that starting the individual at the lowest group in the grade and advancing him as described tends to decrease the total payroll charge, while practically certain advancement on the basis of seniority and efficiency gives the incentive that leads to better service. The commission has adopted examination standards for the purpose of securing correct selection and uniformity in tests in successive examinations of the same character, and giving full information in advance of the character and scope of the tests.

## The WEEK'S NEWS

New Highway Legislation for Rhode Island, Pennsylvania and Ohio—Dixie Highway Directors—New York City and Its Private Water Systems—Everett's Water Project—Kansas Fire Statistics—Motorizing the Fire Department of Providence—Iowa Cities Lose Home Rule but May Have City Managers—Legal Tangles Follow Commission Elections in New Jersey—Co-ordination Plans for Boston Railroads—Jitneys vs. Street Cars—Iowa Cities to Have Playgrounds—No City Aid for New York's Unemployed.

### ROADS AND PAVEMENTS

#### Rhode Island to Raise Highway Taxes.

Providence, R. I.—The senate has passed an act increasing the state tax on cities and towns from 9 to 12 cents, the additional three cents to be used for the reconstruction and maintenance of state highways, the money to be spent under the direction of the state board of public roads. The measure was so amended that portions of unimproved roads between improved sections will be constructed before other new work is begun. The increased tax will create a revenue of about \$200,000. The roads have hitherto been paid for out of the automobile funds, in 1913 the people refusing a bond issue, and in 1914 the General Assembly making no appropriation. Over 325 miles of state roads have been built. The bill now goes to the house for consideration.

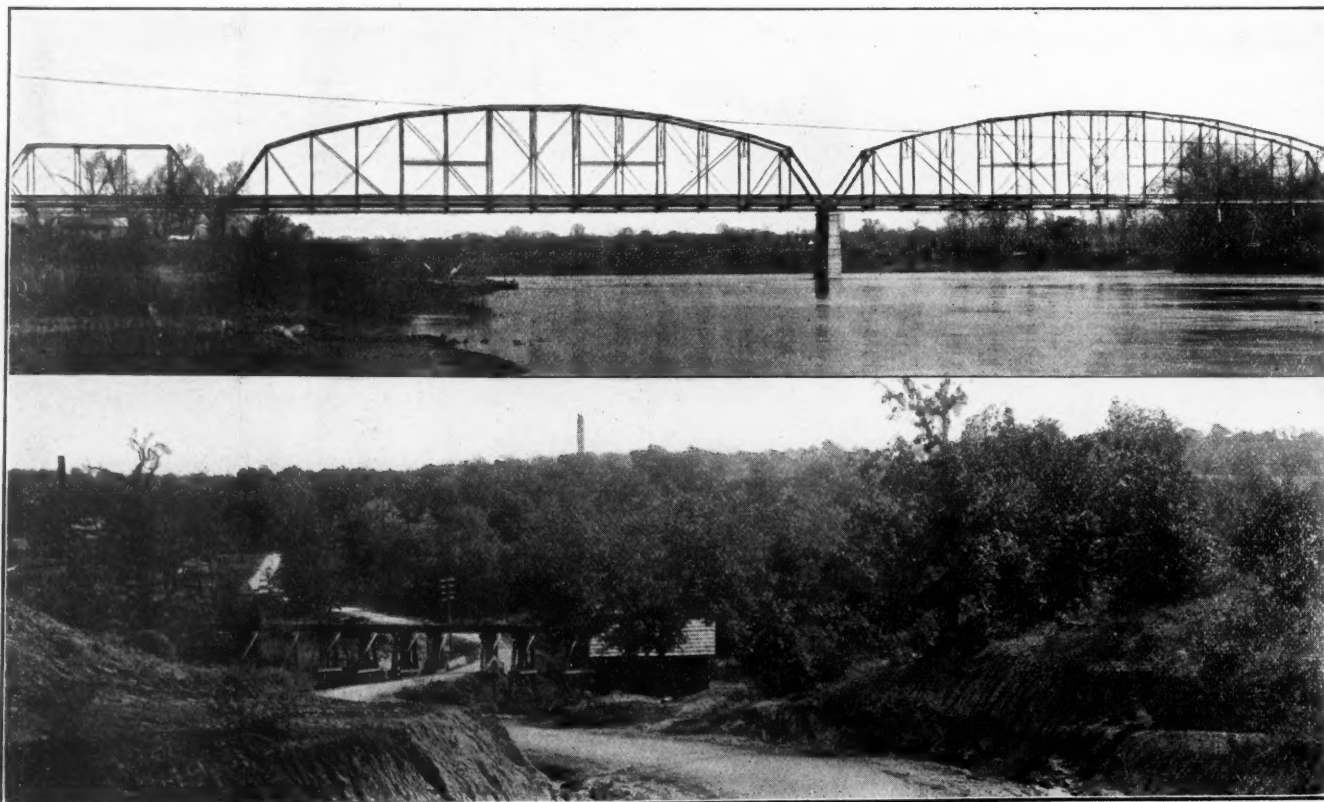
#### New Bridge Opened.

Denison, Tex.—The fine steel bridge spanning Red river, four miles north of Denison, linking the tributary territory in Oklahoma to the north with the city, has been thrown open for public use. The contract for the bridge, the erection of which has just been completed, was let in January, 1912. Actual work was begun the following April. The work was delayed by many accidents, false work being swept away by the floods on several occasions and piers being undermined. The bridge proper is 675 feet in length. At ordinary times the water channel it spans is about 400 feet wide. A substantial railing, to afford protection against

vehicles going over the sides of the dump, has been placed on either side of the roadway. Bermuda grass will also be planted on either side of the dump. The bridge was constructed to carry an 80-ton interurban car, and an electric line has been planned to extend north from Denison, to cross Red river. The bridge was constructed by a stock company formed in Denison and a nominal charge will be made for its use by vehicles. Following the completion of the bridge, the local company gave \$5,000 for the improvement of two miles of the road north of the bridge in Oklahoma. Connecting with the bridge are the Denison macadamized roads that stretch for 60 miles around this city.

#### Pennsylvania's Highway Legislation.

Harrisburg, Pa.—Gov. Brumbaugh has appointed Robert J. Cunningham of Pittsburgh to succeed E. M. Bigelow as State Highway Commissioner. It has been determined that special attention shall be paid to road improvements in Pennsylvania, and the appropriation for this work during 1915 and 1916 will be in excess of \$8,500,000. Senator Sproul, chairman of the Senate Finance Committee, has introduced a bill carrying a general appropriation for highway work in the next two years. The bill carries an appropriation of \$8,500,000 and does not include the administration expenses of the department and of the Automobile Requisition Bureau, which will be provided for in the general appropriation bill. Of the amount carried by the bill, \$6,000,000 is specifically appropriated for the maintenance and improvement of state highways under the act of 1911 and its amend-



Courtesy, Dallas (Tex.) News.

NEW RED RIVER BRIDGE AT DENISON, TEX., AND ROAD LEADING TO IT.



ments. This means that the entire state highway system, including those roads added to the original Sproul plan two years ago, will be retained as state highways. This allowance will give about \$300 a mile a year for the state highways, and it is the judgment of Deputy Commissioner Hunter and Chief Engineer Uhler that this amount will be sufficient to keep the roads in good condition and do considerable permanent work. The sum of \$500,000 is appropriated for the purchase or condemnation of turnpikes upon state highway routes, and \$1,000,000 is set aside for the construction and maintenance of state aid highways, and the remaining \$1,000,000 is to be devoted to the payment of a portion of the expense of the maintenance of township roads, as provided by the Jones bill. Representative Jones has introduced a separate bill making provision for the payment of deficiencies due by the state to townships under the operation of this law.

The appropriation bill introduced by Senator Sproul provides that the appropriations made therein shall include and not be in addition to the amounts received by the commonwealth for the licensing of motor vehicles during the next two years. This prevents there being any question regarding the validating of the appropriation of the funds received for automobile licenses, which matter is now pending in the Supreme Court upon appeal by the auditor general and state treasurer from a decision of the Dauphine county courts in the application of the law of 1913, which provided that money received from automobile licenses should be devoted to highway purposes. In order to prevent any delay or risk of tying up these funds the present bill provides for a specific appropriation to the department. Governor Brumbaugh says that the highway department activities will be carried on under his personal supervision and that he will immediately upon the assumption of his office by Mr. Cunningham organize a "roads council," to consist of himself, Commissioner Cunningham and Chief Engineer William S. Uhler. This council will hold frequent regular meetings at which every detail of the work will be discussed, together with appointments to be made and the efficiency of the department.

#### All Dixie Highway Directors Appointed.

Atlanta, Ga.—The directors who will select the route of the Dixie Highway, running from Chicago to Miami, have all been appointed, and a meeting will be called in the near future to begin selection. The directors, consisting of two from each of the seven states, have now all been appointed. They are:

Georgia—W. T. Anderson, editor of the Macon Telegraph of Macon, and Clark Howell, editor of the Constitution of Atlanta; Florida—G. W. Saxon, of Tallahassee, and S. A. Belcher, of Miami; Ohio—Harry Gordon, lieutenant-governor, and George G. Harris, of Cincinnati; Indiana—Thomas Taggart, Democratic national committeeman, and Carl G. Fisher, of Indianapolis; Kentucky—Harry Hanger, of Richmond, and Claude Mercer, of Hardinsburg; Tennessee—Judge M. M. Allison, of Chattanooga, and A. M. Snook, of Nashville; Illinois—W. W. Marr, of Springfield, and Richard J. Finnegan, of Chicago.

#### Highway Legislation in Ohio.

Columbus, O.—All money derived from the special road levy of three-tenths of a mill and from automobile registration fees is to be divided equally between the main market roads and the intercounty highways under provisions of the Cass highway bill, which has been passed by the senate. Under present highway laws the money is divided 25 per cent. to the main market roads and 75 per cent. to the intercounty system. Automobile owners won their fight to have all money derived from automobile registration spent for maintenance and repair. This money amounts to more than \$750,000 annually. The highway department also has the discretion of devoting portions of state aid money for the same purpose. Control over the intercounty system, under the Cass bill, practically is vested absolutely with local authorities. Authority of township trustees is not curtailed and duties of the county surveyor are increased greatly. The chief efforts of the highway department will be directed to the construction and maintenance of the main market road system.

The state highway department has been somewhat confused by a ruling from Attorney General Turner that the present highway appropriation of \$780,000 may not be used in paying off liabilities running into the millions created prior to Feb. 16, 1915, on road contracts. Active highway work was halted by the further ruling that road contracts may not be let by the state highway commissioner in excess of current appropriations totalling \$780,000. According to Commissioner Cowan, contracts calling for the expenditure of more than \$8,000,000 were let last year by former Commissioner James R. Marker in anticipation of future levies. The total highway revenue for the year came to about \$3,000,000, leaving a total of \$5,000,000 due. None of this can be paid out of present funds, according to Turner. Turner's ruling, directly contradicts a former ruling by ex-Attorney General Hogan.

## SEWERAGE AND SANITATION

### Fatal Explosion in Sewage Disposal Plant.

Ocean Grove, N. J.—An explosion in the valve chamber of the larger of Ocean Grove's two septic tank plants on the afternoon of April 25 injured three men, one of whom died the next day of his injuries. In this plant are four tanks, each 13 by 93½ feet, built side by side. Across one end is a detritus chamber, 57 feet long by 5½ feet wide, and above this is a valve operating chamber, 57 feet long, 8 feet wide and 6 feet high. The whole structure is built of reinforced concrete.

On the day named the designing engineer of the Ocean Grove plant, Clyde Potts, of New York, was showing it to a party of officials from South Bound Brook, accompanied by Walter C. Bowen, sanitary engineer of New Brunswick. Councilmen Raymond Stryker and Karlson La Rue descended the ladder into the valve chamber, followed by Mr. Bowen. Mr. Stryker, on reaching the bottom, struck a match to light a cigar, when a flame burst out of the manhole which blew Bowen to the surface with his face seared and clothing on fire. Stryker, on the floor, was knocked down and, as the flames burned above him, escaped with less injury. La Rue was blown to the manhole opening, and as he clung there, resting on his chest, during the 15 seconds through which the flame roared out of the opening, he was burned on every part of his body except his chest. La Rue and Bowen were hurried to the hospital, where the former died on Monday night. Mr. Bowen will probably be able to leave the hospital in a week or two.

What gas caused the explosion and how it reached the plant are not known. Mr. Potts had previously thought he detected the odor of illuminating gas at the plant. He expects to endeavor in a few days to ascertain the origin of the gas with a view to preventing a repetition of the occurrence.

### To Begin Sanitary Survey.

Annapolis, Md.—State Health Officer Dr. John S. Fulton and his staff have begun the sanitary survey of Anne Arundel county. The survey will require several months' work by a corps of experts, and will be done jointly by the federal bureau of health and by the state board of health. The federal bureau will send over probably six experts, including Drs. L. L. Lumsden, J. B. Loughlin, F. E. Harrington and Henry de Saussure. Others will be Deputy Health Officer Dr. William C. Stone, of the third sanitary district of the state, and Drs. Josiah S. Brown, R. B. Norment, Jr., Robert H. Riley and A. McC. Stephens, of the staff of the state board of health.

### Water Company Must Pay for Typhoid.

Trenton, N. J.—The Supreme Court has sustained a \$750 verdict recovered by D. Henry Jones, against the Mount Holly Water Company. The court held that a water company is bound to use reasonable care that the water supplied shall be wholesome. Three Jones children were stricken with typhoid fever, due to impure water, and Jones sued the Mount Holly firm for \$10,000 for expenses, medicines and doctors' charges. The court allowed dam-

ages of \$750, and the company began certiorari proceedings in an effort to secure a new trial. The court held that it was not necessary to prove beyond all doubt that the company was supplying drinking water which was polluted, a reasonable certainty that such was the case being sufficient.

#### Typhoid Epidemic Under Control.

Cranbury, N. J.—The State board of Health announces that it has traced down the cause of the epidemic of typhoid fever at Cranbury, got control of the disease, and does not expect any further cases. Dr. A. Clark Hunt, chief of the bureau of sanitary and medical inspection of the State Board, had personal charge of an investigation of the cause of the outbreak. He was assisted by Dr. Wallace T. Eakins and the local health authorities of Cranbury. It had been suspected that infected milk was the cause of the typhoid, and the investigation showed that milk from a particular dairy was the chief cause. The delivery from this dairy was stopped, and there have been no further new cases.

#### Work on Sacramento's Storm Sewer.

Sacramento, Cal.—The first unit of the new city sewer pumping station has been completed and turned over to the city. This unit consists of 575 feet of sewer extending from the pumping station to the river, the valve station or gate, and the forty-foot discharge pipe. The work cost \$21,950 and was done by J. W. Terrell, a sewer contractor of this city. The pipe is of reinforced concrete, seven feet six inches in diameter. The walls are twelve inches thick. The gate valve is seven feet six inches in diameter, and together with the operating machinery weighs eleven tons. The gate is operated by hydraulic pressure from the pumping station. The discharge pipe is five-eighths inches thick, and is made of boiler iron. The illustration shows the sewer and the outlet.

### WATER SUPPLY

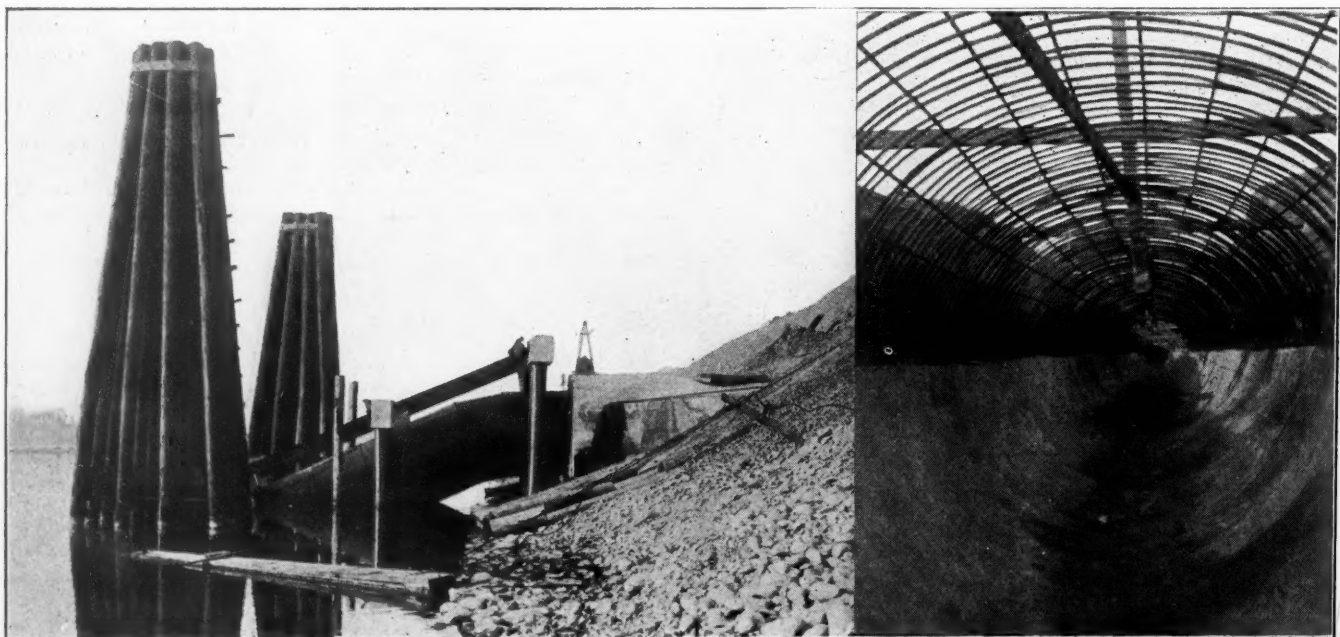
#### New York to Acquire Private Systems.

New York City, N. Y.—With the approach of the use of the Catskill Aqueduct system of water supply for the entire city, the city has entered into negotiations with the private water supply companies in the borough of Queens for the acquisition of their systems. The two companies already approached are the Citizens' Water Supply Company of Newtown, which supplies the Elmhurst, Corona and Ridgewood sections of Queens, and the Queens Water Company, whose territory is the Rockaways. The water supplied to Queens comes from lands on Long Island, which the city proposes to take over for some other use. The city intends to make permanent use of the companies'

water mains in the borough, but the pumping plants and well systems of the companies will be of no value. In return for the acquisition by the city of the mains and the lands of the companies, without the pumping plants and well systems, Commissioner Williams proposed to enable the companies to complete the amortization of this investment out of earnings and carry the water-bearing lands now in use until they could be more readily disposed of for other purposes. The service of the companies the city will agree to take within a period of ten years, under a ten-year contract. If before the conclusion of this period the Catskill system is available and the city takes the property of the companies from them, the companies are to receive a bonus to make good the losses that would result. The amount of the bonus would decrease with the passage of time, until it would be nothing in 1924, the expiration of the contract. The acquisition of these systems, the commissioner points out, would mean the lowering of the present high rates for consumers in the territories of these two companies to the level of the city's water rates in the other boroughs. Both companies have been considering this proposal and upon the completion of their appraisals of their property will report to the commissioner.

#### City Wins Water Case.

Joplin, Mo.—The Joplin Waterworks company was denied the right to set meters at its own option and ordered to cancel all rates, charges and regulations proposed in schedules filed April 30, 1914, in a decision handed down by the Missouri public service commission, a copy of which was received by City Attorney E. F. Cameron. The decision is a complete victory for the city. Unless appealed from and reversed by a court in higher authority, rates and regulations that prevailed before the filing of the schedules will remain in force. At the time of filing the schedules contained a minimum rate of 50 cents applicable to consumers using a one-half-inch meter. This schedule was later amended so the minimum charge would be no greater than the flat rate. The amendment to the minimum rate schedule according to the company's contention, would have resulted in no increase in its present revenue, but would have reduced its operating expenses. The flat rate at present is \$3.60 a year on a house of four rooms, and 90 cents more for each additional room. With the minimum charge the same as the flat rate the company contended its operating expenses would be reduced through meter service, asserting that not as much water would be wasted with meters, more care being taken by consumers. The waste that would be eliminated by the installation of meters and the charging of a minimum rate equal to the flat rate, it contended, would reduce its pumping bill materially. When the case finally



Courtesy, Sacramento (Cal.) Bee.

SACRAMENTO'S NEW STORM SEWER AND OUTLET.



reached the commission there were but two points in controversy. One was whether the company or the consumer should have the option to set meters and the other was in reference to a minimum rate equal to the flat rate. In deciding both against the company the commission declared the proposals were unjust and unreasonable.

#### Water Supply Project for Everett.

Everett, Wash.—The report of Burns & McDonnell, engineers, of Kansas City, has been received by the council. It contains recommendation that Everett's future water supply be drawn from Sultan river; appraises the reproduction cost of the present water system in the city at \$1,333,933, charging off \$242,300 as depreciation and giving that system a present value of \$1,091,633, and estimates the cost of connecting the Sultan river supply with the present system at \$585,000, or, with an auxiliary supply from Miner creek, \$623,170. The report is voluminous and gives in detail the items considered by the engineers in reaching their conclusions. Sultan river, Boulder river, and French creek are chosen for the city's water supply because of availability and cost of installation, but Sultan river is chosen as the best source because of the purity of its water and the proximity to Everett. The engineers reported having examined the pipe system of the present system at about 200 points and found it to be in fairly good condition. The report concludes that Sultan river could be tapped and connected with the distributing system, provided this system could be acquired at the appraised value of the engineers, at a total cost of \$1,718,803. The engineers have been at work several months and the surveying and field work was completed two months ago.

### STREET LIGHTING AND POWER

#### Richmond Refuses to Lease Its Gas Works.

Richmond, Va.—The administrative board has voted to recommend that the proposition of the Southern Gas & Electric Company to lease the city gas works for a period of 30 years be rejected on the ground that it is absolutely without merit. This recommendation was prepared by Commissioner McCarthy. It will be made the subject of the board's recommendation to the council committee on public buildings, properties and utilities. With the agitation of the question of the lease of the gas plant the matter of cheaper gas for Richmond has also been brought up. It resulted in the introduction of a resolution by Alderman Powers to reduce the price of gas from 90 to 80 cents per 1,000 cubic feet. This is now pending and will be, it is believed, favorably acted upon.

#### Rate Reductions for Jacksonville.

Jacksonville, Fla.—The board of bond trustees has cut the price of electricity for lighting and power, the new rates to go into effect May 1. The new minimum rate for lighting will be fifty cents per month instead of \$1 as now. A similar reduction is made for power. The rate for illuminating electricity for all services using less than 28½ k.w. per month will be 7 cents per kilowatt.

#### Municipal Lighting Bill for Niagara Falls.

Niagara Falls, N. Y.—The Niagara Falls municipal electric lighting plant bill has passed the assembly. The bill is the same measure, slightly amended, that passed the assembly two years ago, and was held in the senate cities committee until too late for passage. The bill met a like fate last year, Senator Thompson opposing it, because he claimed it vested too much power in the works board. The bill gives the city the right to obtain its power from the Niagara river, if the government grants a municipal permit, to contract for power with existing companies, or to acquire by condemnation or otherwise the property of the private company. Before steps are taken by the city, the proposition must be submitted to the taxpayers at a special election. The amendment made by the assembly cities committee provides that the plant shall be self-sustaining, the bill specifying "that no moneys shall be paid into the lighting fund by taxation, transfer or otherwise." The bill is now up to Senator Thompson. The works board ceases to exist at the close of this year, when the city manager plan becomes operative here.

### FIRE AND POLICE

#### Fire Statistics of Kansas.

Topeka, Kan.—The total fire loss in Kansas was \$3,411,224. Harvey county had the largest loss, \$329,832, with Wyandotte county second, with \$246,087. Grant, Haskell, Stanton and Stevens counties had no fire losses at all, and Kearny county had a loss of only \$25, the only one of less than one hundred dollars. The figures are contained in the report of L. T. Hussey, state fire marshal.

#### New Police Commissions for New Hampshire Cities.

Concord, N. H.—The police commission bill providing for the establishment of new police commissions in the cities of the state, and the town of Exeter, has passed the senate. The bill, which had been passed by the house, and which had been amended to eliminate the city of Manchester, in committee, came before the senate in a divided report, the measure passing after the minority report was substituted for the majority opinion.

#### Vote for Women Police.

Albany, N. Y.—The Senate has passed the Jones bill providing for women patrolmen in New York City by a vote of 28 to 17. The bill had been taken as a joke until the roll call showed that Senator Jones of Chenango had marshalled a majority of the votes for his measure.

#### To Have Drill Tower.

Watertown, N. Y.—Fire Chief H. C. Bundy announces that following the gift to the city of a site a training tower for the fire department is to be erected. The structure is to be of brick and steel, 72 feet high and 16 feet square. The walls will resemble those of the ordinary building and there will be a cornice at the top so as to duplicate ordinary conditions as much as possible. A stairway will give access to the roof from the interior and down through the center of the tower will be a well, to be used for the drying of hose, 2,000 feet at a time. Work is to begin immediately.

### MOTOR VEHICLES

#### Cities Lend Apparatus.

Massillon, O.—Through the generosity of Canton and Akron, Massillon will not be partially deprived of fire protection during the time that the present horse drawn hook and ladder truck at central engine house and the combination truck at engine house No. 3 are being converted into automobile apparatus, Safety Director Shepley announces. Through Safety Director Kunkle of Canton and Fire Chief John T. Mertz, of Akron, he has secured from Akron the use of an aerial 75-foot hook and ladder truck to replace that taken from the central engine house, and from Canton a combination chemical for engine house No. 3. Director Shepley expects that the work on Massillon's apparatus will occupy three months.

#### Economy of Motorizing in Providence.

Providence, R. I.—In recommending the complete motorization of the Providence fire department the board of fire commissioners reports on the cost during the past 10 years of maintaining horses. On December 31, 1914, there were in actual service 13 motor-driven vehicles, of which three complete motor-driven combination wagons and five motor chasses were purchased during the year. To completely motorize the present horse-driven apparatus would call for the purchase of 14 tractors for steam fire engines; 10 tractors for hook and ladder trucks; 10 chasses for combination wagons and the expense of transferring hose wagon bodies now in service, and two motor cars for the fire alarm service. This plan provides for the utilization of practically all of the horse-drawn apparatus in active service and its adoption would enable the department to dispose of 83 horses, from the sale of which at least \$8,000 should be realized. The total cost of the equipment specified would, it is estimated, approximate \$170,000, and if the amount which should be obtained from the sale of the horses was applied in part payment, the sum necessary to be raised would be reduced to \$162,000, the interest charges on which, at 4 per cent. would be \$6,480, or less than one-half of the amount paid by the department for hay and grain alone during 1914. The report states that an amount equal to

that now disbursed for the maintenance of horses would, if set aside annually for a period of 10 years, provide a fund sufficient to pay not only all interest charges during that period, but also to discharge all indebtedness incurred in motorizing the present apparatus of the fire department. During the last 10 years, including the cost of new horses purchased, \$24,244.28, the total cost for maintenance of the horse service was \$233,759.74. Of this amount a total of \$89,464.14 was spent for hay, \$69,891.82 for grain, making a total of \$159,355.96 expended for feeding during the 10 years ending Dec. 31, 1914, or an average of \$15,935.59 per year. The total cost for shoeing the horses during the 10 years was \$33,589.10; for veterinary attendance, \$8,864.26; for harnesses and the repairing thereof, \$7,706.14. The maintenance expenses each year for the upkeep of the horses were as follows: In 1905, \$21,303.64; in 1906, \$21,511.20; in 1907, \$28,017.34; in 1908, \$23,318.55; in 1909, \$25,097.56; in 1910, \$27,243.18; in 1911, \$24,589.60; in 1912, \$24,344.17; in 1913, \$19,181.07, and in 1914, \$19,153.43. The decrease is due to motorization during the last two years.

#### New Cars in Service.

Haverhill, Mass.—New automobiles for city departments have arrived and been put in service. Alderman Wood is using the new Buick car. The new Oldsmobile car for the use of the police department bought by Alderman Hoyt, is also in service. The cars will be housed in the Court street engine house, which is being turned into a garage. There are only three horses there at present for the engine.

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## GOVERNMENT AND FINANCE

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### Home Rule Loses in Iowa.

Des Moines, Ia.—The senate defeated, for lack of one vote, the Arney bill for home rule for cities and towns. The bill was one which was intended to give to cities and towns greater freedom in the handling of their business affairs and had the indorsement of the League of Municipalities. The house refused to go the length of permitting municipalities to license garages and livery stables. The senate passed the bill on the theory that this was about the only way to regulate them in the small towns and in many places they become nuisances.

### Commission Troubles in New Jersey Cities.

New Brunswick, N. J.—Following the adoption by the city of the commission form of government, the legality of the election is being questioned. Acting on behalf of J. Fred Orpen, former alderman, and at present one of the city's tax assessors, ex-Senator Theodore Strong received from Supreme Court Justice Swayze a writ of certiorari reviewing the election. This will act as a stay, and the present common council will continue in office until the writ is passed upon. Meanwhile Commissioners-elect Edward Farrington, Edward Houghton, John J. Morrison, James Mershon and Charles A. Oliver were legally sworn in by City Clerk John Watson, Supreme Court Justice Bergen issuing an order allowing this as a matter of legal form. In the event that the proceedings should be decided in the favor of the commissioners, they will be qualified to take office at once. The point of attack is the preferential ballot. Should the preferential ballot law be declared unconstitutional, it will mean the setting aside of the election and the city must then hold another election, which would be conducted under the primary feature of the Walsh act, whereby all nominees are submitted to the voters at a primary election and the ten men receiving the highest vote become candidates at the election which follows the primary.

Bayonne, N. J.—The commissioners elected in Bayonne, Pierre P. Garven, Matthew T. Cronin, Henry Wilson, Horace Roberson and Hugh H. Mara, took the oath of office, but are restrained from organizing and making appointments by an order from Supreme Court Justice James J. Bergen prohibiting them from transacting any business except taking the oath of office until the court passes on certiorari proceedings. The proceedings were brought by John O. Devlin, a defeated candidate for commissioner; Elmer W. Demarest and James T. Brady, who contend

that the act under which the election was held is unconstitutional in many respects and that it compels voters to vote for five candidates. Mayor Bert Daly was beaten out by Garven by 16 votes, and he is asking for a recount.

Somerville, N. J.—Following the argument on the constitutionality of the Hennessy preferential ballot before Supreme Court Justice James J. Bergen, the court reserved decision. Hoboken, which recently elected five city commissioners, is also interested in upholding its constitutionality. The commissioners of New Brunswick, Bayonne and Hoboken are represented by former Supreme Court Justice Gilbert Collins and former State Senator Edwards of Jersey City. Senator Strong, opposing the law, had thirty-four reasons why the ballot was unconstitutional. To his mind the most important fact is that the voter is required to vote for five men if he votes for any; second, that the act provides that one space shall be left blank for the voter to write in the name of any candidate he desires. Justice Bergen stated that the case was likely to go to the Court of Errors and Appeals however he might decide. In case this attack on the constitutionality of the preferential forms of ballot fails, there will likely be a second attack by the same prosecutors based on the form of the ballot. Justice Bergen reads the act to mean that a space shall follow the name of each candidate. This was not done in Bayonne or New Brunswick.

### Commission Wins.

Beaufort, S. C.—Beaufort formally adopted the commission form of government with city manager at the general election, endorsing the vote of the primary.

### Single Tax Loses.

Colorado Springs, Colo.—The single tax proposition was snowed under by a vote of more than seven to one at the recent election.

### City Manager in San Diego's Charter.

San Diego, Cal.—Amendments to the charter of San Diego, voted at a recent election, were approved by the assembly at Sacramento following a similar senate action. A city manager is one of the features of San Diego's revised charter.

### Managers for Iowa Cities.

Des Moines, Ia.—The McFarlane bill, to enact into law the Waterloo city manager plan for first class cities, has passed the senate and house. The question of whether a manager shall be hired is to be submitted to the people. The senate also passed the house bill to permit of voters sending their votes by mail when they are away from home on election day.

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## RAPID TRANSIT

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### Report on Co-Ordination of Boston Railroad Systems.

Boston, Mass.—Street railways entering and crossing Boston should be rerouted and connected with the steam railroads to the north and south and to the west, establishing loops for the operation of tunnel trains of several cars. The Boston Elevated Railway should not be merged with the Bay State Street Railway at this time, partly because of the five-cent fare provision in the Boston elevated charter. These are some of the recommendations of the Public Service Commission in its report to the legislature upon the transportation system in the metropolitan district. Comprehensive studies are presented of future transportation developments, especially dealing with the transportation of passengers. The commission finds that the electric cars and the railroads should co-ordinate for the suburban traffic, and important expansions could be made if the difficulties created by the Boston Elevated charter could be overcome; but some of the more important developments must be coincident with the creation of public ownership or a more prosperous financial condition of the transportation companies. The report is signed by all the commissioners, Frederick J. Macleod, Everett E. Stone, Clinton White, John F. Meaney and Joseph B. Eastman. In the preparation of the material they have had the



expert assistance of William B. Bennett of Madison, Wis., assistant chief engineer of the Railroad Commission of Wisconsin. The report presents also a financial report prepared under the direction of J. W. Lester, the commission's chief accountant. Mr. Bennett considers three general plans for the unification of the Boston Elevated and the Bay State lines, the first of which, an interchange of street railway territory and business, is dismissed without serious consideration. The other plans are (B) Consolidation of lines within the district of these companies now operating therein or at least such of them as now furnish dual service to the same locality, and providing in lieu thereof a unified service under a combined management with public regulation. (C) Consolidation of existing companies, as above, without restriction as to limits of properties to be included in the combination. Mr. Bennett favors the second of these plans. It would involve a unification of street railway and electric rapid transit lines within the metropolitan district solely. The commission regrets exceedingly that it can see no remedy immediately practicable and desirable for the inequalities of fare resulting from dual street railway service in the metropolitan district.

#### Jitneys No Excuse for Car Reductions.

Seattle, Wash.—Operation of a street car line at a loss does not justify curtailment of service, according to a ruling issued by the state public service commission, which has been investigating reductions in Seattle's street car service on the ground that competition of jitneys had made certain lines unprofitable. The commission ordered full service restored.

#### Want New System of Subway Ventilation.

New York, N. Y.—The Public Service Commission for the First District has adopted a resolution in favor of the employment of the firm of J. G. White & Company, as consulting engineers, to work with the engineering department of the commission in perfecting some new system of ventilation for the subways now under construction in the city. The present system consists of gratings in the sidewalks, and it has been alleged that this system should be changed as the polluted air of the subway is constantly rising through these gratings and necessarily comes in contact with pedestrians; and the present system tends to decrease the width of sidewalks, as the people object to walking over them, thus causing congestion. The commission and the consulting engineers will now investigate the merits of a proposed system, consisting of chimneys placed either in private property or in public squares. It is said that these chimneys may be made in an ornamental design, and it is also claimed that with the use of the chimneys every objection to the grating system would be overcome.

#### Jitney Effects on Street Cars.

Houston, Tex.—Gross earnings of the Houston Electric Company during the year 1914 were less than the cost of operation because of the jitney, according to the annual report of the company, filed with Public Service Commissioner Scarborough. The cost of operation, not including depreciation, was \$1,495,164.87, while the gross income was \$1,398,280.24. For the month of January the earnings fell off more than \$34,000. For the month of February the decrease as compared with last year, was more than \$31,000. If this rate of decrease should continue for the entire year, the earnings for 1915 would be more than \$400,000 less than for 1914. There are 656 jitneys in service. They operate over 25,000 miles on the paved streets of this city. They carry over 23,000 passengers and earned approximately \$1,180 on a given day, March 11.

Dallas, Tex.—That the Dallas jitneys are responsible, at least in part, for a loss of \$1,370 per day or a total of \$500,000 per year, in the revenue of the local street car companies is shown by the earning sheet for March of the Stone & Webster properties in this city. In January there were so few jitneys that their effect on the street railway company's earnings was almost negligible. For the month of February the total jitney earnings are estimated at \$14,600, or an average of a little more than \$500 a day. The decrease in passenger revenue of the traction company

in February, 1915, as compared to February, 1914, was \$31,300, but of this amount \$5,000 is attributed to the corn show and \$11,700 to the natural decrease due to business depression. The March figures, taken from the earning sheet of the car company, prove that the decrease in the traction company's receipts is growing. In March, 1914, the company's receipts totaled \$107,229.45, while in March, 1915, the earnings amounted to \$64,745.88, showing a loss for the month of \$42,483.57. A portion of this loss may be chargeable to business depression, but most of it is undoubtedly due to the jitneys, the report shows.

## MISCELLANEOUS

#### Playgrounds for Iowa Cities.

Des Moines, Ia.—The house has passed the Witthauer bill authorizing children's playgrounds in Iowa cities. On petition of 15 per cent of the voters the question is submitted to the people, and, if carried, a tax levy of not over 2 mills can be made for support.

#### Popular Instruction in City Beautifying.

Pittsburgh, Pa.—In line with the movement for the improvement and beautifying of front and back yards in Pittsburgh, Superintendent W. F. Burke of the city parks has set up a model in the Phipps Conservatory, in Schenley Park. The model represents a small dwelling set in the center of a yard. The surrounding lawns and flower beds show what can be done in beautifying the ordinary yard. Superintendent Burke and his assistants have drawn plans, set to a scale, and furnish this, along with plenty of information as to ordinary landscaping, to scores who are applying for instruction.

#### Town to Go into Saloon Business.

Bay Point, Cal.—Admitting its inability to cope with the growing number of "blind pigs," this town, heretofore a dry community, is going into the saloon business. This move was decided upon following a conference between the town trustees and representatives of the G. A. Smith Lumber Company. The company will become a partner of the town in the saloon business. C. Ritter, one of the trustees, will be manager and three other trustees will supervise the enterprise. The profits—if any—go toward shade trees, street lights, paving and other municipal needs.

#### Bridgeport's Municipal Ice Legislation.

Bridgeport, Conn.—When the amendment to the Bridgeport city charter allowing the city to establish a municipal ice plant is reported to the general assembly at Hartford, it is understood that it will carry a clause allowing the city to condemn by due process of law any private ice plant existing in the city of Bridgeport. It is said that the largest of the artificial ice companies, at least, has no objection to this clause and is perfectly willing that the city should take over its plant at a fair price. It is probable that condemnation proceedings will not be resorted to, unless representatives of the company and of the city disagree as to what is a fair price. In that event the matter will be taken into court and the plant condemned in the usual way.

#### New York Will Not Aid Unemployed.

New York City, N. Y.—The board of estimate has unanimously refused to indorse a scheme for the establishment of municipal workshops for the unemployed. Frederic C. Howe, Darwin J. Meserole, Frederick C. Leubuscher and others appeared to ask support for the Gilchrist-Milligan bill, which would give the city among other things the right to equip loft buildings and install machinery for the use of the unemployed who had been bona fide residents of the city for a year. Mayor Mitchel said it was utterly unsound policy for the city to enter into any commercial business which would compete with private enterprises. For the first time last winter the city had advanced its public work to help the unemployed, and through its committee on unemployment had helped these men to a great extent.

## LEGAL NEWS

### A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

#### Vacation of Streets—Compensation—Liability of City.

*Jones v. City of Aurora*.—When streets of a city are vacated by competent authority, the city must make adequate compensation to abutting property owners whose property is injured thereby.—Supreme Court of Nebraska, 151 N. W. R., 958.

#### Railroads—Injuries from Construction—Damages—Nuisance.

*Sandstrom v. Oregon-Washington R. and Nav. Co.*—The permission of public authorities for the construction of a railway exonerates it from the charge of maintaining a public nuisance, but does not affect its liability for damages for the invasion of private rights.—Supreme Court of Oregon, 146 P. R., 803.

#### Public Improvements—Adoption of Plans.

*Smith et al v. City of Jefferson et al.*—Where plans for a street improvement were read and approved at a council meeting, and the resolution and notices of intention to do the work and the resolution providing for bids all referred to the plans and specifications as on file and having been adopted, the action of the council must be construed as an adoption of the plans and specifications, although they were adopted along with other resolutions.—Supreme Court of Oregon, 146 P. R., 809.

#### Injury to Pedestrian—Negligence.

*Vandevere v. Kansas City et al.*—Where the evidence, in an action against a city for injuries from being struck by a billboard, showed that the billboard was 10 feet high and 12 feet long, and insecurely "tacked" to a fence or building alongside the street, that the city inspector frequently saw it under such circumstances that its insecure fastening could have been observed, and that the gust of wind which blew it down was not out of the ordinary, the question of the city's negligence was for the jury.—Kansas City Court of Appeals, Missouri, 173 S. W. R., 696.

#### Excavations in Streets—Actions—Admissibility of Evidence.

*Southern Bitulithic Co. v. Perrine*.—Where, in an action against a city and its contractor to pave a street for injuries to a pedestrian falling into an excavation, the contractor alleged that the accident was caused by the negligence of a third person, who was an independent contractor, plaintiff could show the relation of the third person to the contractor and the work he was doing, for the proper execution of which he was responsible, and could prove by the city engineer, who looked after the work, the channels through which such work was usually done, and what relation the city and its contractor had with laborers and others engaged in such work.—Supreme Court of Alabama, 67 S. R., 601.

#### Defective Sidewalks—Negligence—Liability of City.

*The City of Key West v. Baldwin*.—Where the charter act of a city provides that a city council shall have power to regulate and provide by ordinance for the grading and construction of sidewalks, and the paving and repair thereof by the owner of property alongside and abutting on such sidewalks, and providing that in the event the property owner whose duty it is to construct or repair the sidewalk on which his property abuts fails to comply with the ordinance, the city may cause the same to be constructed or repaired, and the property owner shall be liable to the city for the cost of such work, and the same shall be a lien on such property, also requiring the city to keep the streets and sidewalks free from obstructions and in good condition, such provisions do not relieve such city of its duty to exercise reasonable diligence in repairing defects in sidewalks, nor from liability for negligence in the discharge of such duty.—Supreme Court of Florida, 67 S. R., 808.

#### Public Improvements—Liens—Assessments—Validity.

*City of Roswell v. Bateman*.—Where the rights of a city under a claim of lien had become fixed at the time the provisions of the Constitution became effective and in force, its rights would not be affected because the law, under which its right to the lien accrued, might conflict with the Constitution, as such rights were preserved by section 4, art. 22, of the Constitution.—Supreme Court of New Mexico, 146 P. R., 950.

#### License Charge—Reasonableness—Question for Jury.

*Kittanning Borough v. American Natural Gas Co.*—Where, in an action by a borough to recover delinquent annual license fees charged against a natural gas company, defendant claimed that the charges were unreasonable in that they were largely in excess of the cost of inspection, and there was evidence, though contradicted, to show the cost of inspection, and that in view thereof the fees were not unreasonable, the court properly refused to direct a verdict for defendant.—Supreme Court of Pennsylvania, 93 A. R., 15.

#### Public Wharves—Continuation of Highway.

*Anderson Steamboat Co. v. King County et al.*—Under Laws 1895, p. 341, and Laws 1899, p. 39, authorizing a county to build an approach and wharf and operate a ferry, where a wharf is built on shore property title to which is in the state by Const. art. 17, chap. 1, but at the end of a street which terminated in the shore road up to which an approach was made for the wharf, the wharf or approach is not a continuation of the street, subject to a common user by another ferry line.—Supreme Court of Washington, 146 P. R., 855.

#### Duty to Maintain Street—Obstruction of Waterway.

*Roberts v. City of Glens Falls*.—Whether or not a city held a fee to a street in which it claimed merely to hold an easement, it was bound to maintain such street, and in doing so could not obstruct a natural water course, or escape liability for damages from such obstruction, on the theory that an insufficient or defective culvert had been installed by a person under whom the city claimed to hold the alleged easement; every owner of premises through which a natural stream flows having the right to have the water pass unobstructed.—Supreme Court, Appellate Division, Third Department, 151 N. Y. S., 1010.

#### Use of Streets—Negligence—Right of Way.

*Virginia Ry. & Power Co. v. Smith*.—The driver of defendant's repair wagon, which under an ordinance had the right of way on sounding its gong, requiring other vehicles aware of its approach to stop on the extreme right of the street, while hurrying to repair a fallen trolley wire, and while continuously sounding the gong, observed the danger of a collision with an automobile on the right side of the street, and applied the brakes and slowed down the speed of his horses, and would have averted the collision but for the fact that the tire of a wheel of the wagon caught on the street car rail and the wheel slipped or skidded, causing the front wheel of the wagon to swing toward the car and strike plaintiff. Held that there was no actionable negligence on the part of the driver, but an accident for which the defendant was not liable in damages.—Supreme Court of Appeals of Virginia, 84 S. E. R., 641.

#### Public Improvements—Assessment of Benefits—Amount of Assessment.

*Maryland Trust Co. v. Mayor etc., of City of Baltimore et al.*—City Charter of Baltimore (Laws 1898, c. 123) § 175, providing that when the commissioners for opening streets shall be directed to lay out or open any street they shall ascertain the damages thereby caused to the owner of any property for which he should be compensated, and that, having ascertained the whole amount of damages, and having added thereto an estimate of the expenses, they shall assess all property the owners of which they shall decide to be directly benefited, does not authorize the assessment of benefits in an amount materially exceeding the aggregate of the damages from the improvement and the expenses, though benefits result from the improvement in excess of such damages and expenses.—Court of Appeals of Maryland, 93 A. R., 454.



## NEWS OF THE SOCIETIES

### Calendar of Meetings.

May 10-14.  
**AMERICAN WATERWORKS ASSOCIATION.**—Annual Convention Cincinnati, O. Secretary, J. M. Diven, 47 State street, Troy, N. Y.

May 25-28.  
**INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE.**—Cincinnati, O. F. J. Cassada, secretary-treasurer.

June 2-4.  
**SOUTHERN GAS ASSOCIATION.**—Hotel Isle of Palms, Charleston, S. C.

June 1-3.  
**CONFERENCE OF MAYORS AND OTHER CITY OFFICIALS OF NEW YORK.**—Sixth annual convention, Rensselaer Inn, Troy, N. Y. Secretary, William C. Capes.

June 14-16.  
**SOUTHWESTERN WATERWORKS ASSOCIATION.**—Annual Convention, Galveston, Tex. Secretary, E. L. Fulkerson, Waco, Tex.

June 16-19.  
**TRI-STATE WATER AND LIGHT ASSOCIATION** of the Carolinas and Georgia.—Annual Convention, Asheville, N. C. President, F. C. Wyse, Columbia, S. C. Convention Manager, W. F. Stieglitz, Columbia, S. C.

June 22.  
**MAYORS' ASSOCIATION OF CONNECTICUT.**—Bridgeport, Conn.

Aug. 2-6.  
**GOOD ROADS CONGRESS.**—San Francisco, Cal., under the auspices of the Tri-State Good Road Association.

Aug. 31-Sept. 3.  
**INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS.**—Annual Convention, Cincinnati, O.

Sept. 13-19.  
**PAN-AMERICAN ROAD CONGRESS.**—Held by American Road Builders' Association and the American Highway Association. Oakland, Cal.

September 20-25.  
**INTERNATIONAL ENGINEERING CONGRESS.**—Am. Soc. C. E., Am. Inst. Min. E., Am. Soc. Mech. E., Am. Inst. E. E. and Soc. N. A. & M. E., San Francisco, Cal. Secretary, W. A. Catell, Foxcroft Building, San Francisco, Cal.

October 12-15.  
**AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.**—Annual Convention, Dayton, O. Secretary, Charles Carroll Brown, 702 Wulsin Bldg., Indianapolis, Ind.

November 17-19.  
**NATIONAL MUNICIPAL LEAGUE.**—Annual Convention, Dayton, O. Secretary, Clinton Rogers Woodruff, 705 North American Bldg., Philadelphia, Pa.

### International Engineering Congress.

Volume IV of the transactions of the congress will comprise an important series of papers on the general subject of railways and railway engineering. This field will be treated under seven principal topics covering relation of railways to social development; present status of railways; economic factors governing building of new lines; location; physical characteristics of road, including track and roadbed; bridges; tunnels; terminals; construction methods; signals; road equipment, including motive power other than electric; rolling stock in general; floating equipment; electric motive power in general.

Approximately twenty-seven papers are expected for this volume, prepared by authors representing nine different countries. The list of authors includes many of the most eminent names in this field of engineering work throughout the world.

The volume as a whole will be illustrated with charts, diagrams and half-tones, together with discussions contributed by leading American and foreign engineers, and will form a most valuable acquisition to the library of all engineers and others who may be interested in these phases of engineering work.

The transactions of the congress as a whole include nine or ten other volumes, covering the various fields of engineering work.

### American Water Works Association.

The thirty-fifth annual convention of the American Water Works Association will be held in Cincinnati, O., May 10-14. In accordance with a resolution passed at the last convention, all day Thursday, May 13, shall be devoted to practical papers of interest to waterworks operators, answering questions and discussing generally practical waterworks subjects. The following short practical papers will be taken up at this session:

"Assessing Cost of Extensions in Municipally Owned Plants," by D. A. Reed; "How to Determine Size of Tap and Meter," by Jacob Klein; "A Mercury Column Alarm for Standpipes," by W. E. Haseltine; "Water from Gravel Wells," by C. N. Wiles; "Difficulties in Designing and Operation of Medium Sized Waterworks Plants," by E. B. Black; "Plumbing and Control of Plumbers," by Scotland G. Highland; "City Fire Limits," an illustrated lecture by Albert Blauvelt; "Pneumatic Pumping as Applied to Municipal Plants," by John Olyphant (illustrated with lantern slides); "Artesian Wells and Methods of Pumping Them," by John D. Kilpatrick.

The following questions have been propounded:

1. Experience in the use of caps instead of plugs on dead ends and unconnected branch pipes—is there any economy or advantage in the use of such caps?

2. What legal right has a water company to the use of public streets after the expiration of its franchise?

Experiences of water companies whose franchises have expired, especially in cases where duplicate public works have been built.

3. What experience have you had in the use of lead wool for joints in cast iron pipe? Is it as economical and satisfactory as melted pig lead?

4. Is it your practice to test new water meters or meters repaired at the factory, or do you rely on the factory tests?

If tests of such meters are made, do they indicate that the new or factory repaired meters are accurate, or not?

5. Are meter bills of municipal waterworks a lien on property? If so, how are they regulated?

The following topics for discussion have been proposed, and all members are to come to the convention prepared to throw some light on the various subjects proposed, or to send written discussion, if unable to attend.

**Service Pipes:** Experience with various materials, particularly steel or iron ungalvanized. Reasons for using iron or steel instead of lead; experiences

with material other than iron, steel or lead.

**Water Analysis:** The true object of analyses, and what analysts should report on. Discussion of uniformity of reports of analyses.

**Care of Valves:** Packing and material used for packing; lasting qualities of various packings. Setting of valves to permit packing without digging up the streets. Oiling valves; both stuffing boxes and gears.

**Owners of Meters:** A general discussion of who should own the water meters, and experiences; and experience with publicly and privately owned meters. Care of privately owned meters.

**Curb Cocks:** Necessity of installing, their use and care; advisability and practicability of placing shutoff in the streets, at or near the main, to take care of service leaks outside of the curb line; cost of street boxes, keeping record of them, etc., as compared with curb boxes.

**Ownership of Services:** Should the service to the curb line be owned by the department or company, or by consumer? Discussion of care of services owned by consumer.

**Water Waste:** Water waste surveys with house to house inspection as compared with universal metering; cost and efficacy of the two systems of checking waste. Periodical vs. continual house to house inspections. Water saved by various methods of waste prevention.

**Leaky Plumbing:** Enforcing rules concerning leaks in plumbing, by fines, shutting off water, or other means. General discussion of inspection of plumbing and reduction of leaks in unmetered buildings.

**Private Fire Services:** Regulation and limit of sizes; charges for service, basis of where made; equality of charges for services. Dangers from installation of numerous large services for sprinkler or standpipe systems. Use of water by tests of fire services.

**Public Uses of Water:** Charges by municipal plant for fire protection, public buildings, street sprinkling, etc.; method of basing of such charges.

**Street Repairs:** Repairing street pavements and surfaces, when taken up for laying mains and services or making repairs. Repairs of asphalt or bituminous pavements, especially in small towns where the visits of repair outfits are at long intervals. Use of cold asphalt mixture, cement, etc.

**Fire Hydrants:** Regulations for the use of fire hydrants for purposes other than extinguishing fires. Charges for such service when allowed.

**Hydrant Branches:** Use of blowoff tees for hydrant branches to keep branches below frost, especially on large mains. Clogging of such branches with heavy sediment from bottom of main.

**Valves:** The use of valves of less diameter than the main on which they are set, using reducers on either side of valve; especially on large mains.

The saving effected by use in small valves. To what extent does the Venturi principle apply? The reduction in capacity of pipe lines by use of valves smaller than main line. Allowable reduction in diameter of valve from diameter of main.

Pipe and Fittings for Coagulants: Material for pipe and fittings for chemical solutions used as coagulants in filter plants; troubles with such pipes and fittings.

Filter Operation: The alkalinity and acidity of water in reference to filter operation.

Electrolysis: Experiences with electrolysis; means of discovering, and success or failure of remedies applied. Distinguishing effects on pipes of electrolysis from that of acid soil, particularly salt marsh.

Hot Water Boilers: Rules for installing and instructions for care of water fronts and hot water boilers when water is shut off in the streets.

Power from Garbage: Use of power from garbage reduction plants for pumping water.

Sewage Disposal: The relation of sewage disposal to water supplies, and the duty of waterworks managers in preventing or regulating contamination of the sources of water supply.

#### Pan-American Road Congress.

At a meeting of the executive committee of the Pan-American Road Congress, held in New York, N. Y., April 16, it was definitely decided to hold the congress at Oakland, Cal., during the week of September 13. This date was fixed upon, owing to the advantageous arrangements that could be made for halls for meeting places, and also because it was felt that this date would enable engineers who would attend the International Engineering Congress to attend the Pan-American Road Congress as well.

The members of the committee reported good progress, and the outlook is most excellent for a great gathering of road builders. The program will include speakers of national and international reputation as experts in the construction, repair and maintenance of highways.

Suggestions have been made—and it is believed will be carried out—that there be set aside by the exposition authorities one day during the week of the congress, to be known as Pan-American Road Congress Day.

The executive committee met in New York on April 26. Governor Charles W. Gates, of Vermont, chairman of the committee, was present, together with W. W. Crosby, James H. MacDonald, J. E. Pennybacker and E. L. Powers, the other members of the committee. Progress reports by the chairmen of the sub-committees were submitted, showing that the plans for the congress are going forward in a very satisfactory manner.

Among the measures adopted at this meeting was one providing that there should be two classes of members of the congress, namely, donor and tem-

porary members. The donor members will be composed of those who pay not less than \$50, and the temporary members will be the individuals who pay a fee of \$2. Both donor and temporary members will be entitled to participate in the proceedings of the congress and receive copies of the printed proceedings to be issued thereafter. All members in good standing of both the American Road Builders' Association and the American Highway Association, as of June 1, 1915, will have all the rights and privileges of temporary members, and will be entitled to a copy of the proceedings without further cost. In addition to the publication of the names of donor members in the advance and final programs, they will be entitled to the nomination of one temporary member for every \$10 subscribed by them, such members to be accorded the privileges and receive the publications the same as other temporary members.

The next meeting of the committee will be held May 10.

It is expected that this congress will bring together those interested in highway improvement—not only from all parts of the United States and Canada, but also from the South American countries, all of whom will be invited officially to participate in this congress.

The Pan-American Road Congress will be held under the joint auspices of the American Road Builders' Association and the American Highway Association. The plans will be made and carried out by an executive committee of five, of which Governor Charles W. Gates of Vermont is chairman, the other four members of the committee being as follows: James H. MacDonald, former state highway commissioner of Connecticut; Major W. W. Crosby, former state highway engineer of Maryland; J. E. Pennybacker, chief, division of economics, U. S. Office of Public Roads, and E. L. Powers, editor of "Good Roads."

## PERSONALS

Floy, Henry, consulting engineer, New York City, has made an appraisal based on which the city of Elmira, N. Y., has voted to purchase the waterworks and system of the Elmira Water, Light & Railroad Co., which supplies the city. The price agreed upon is \$1,500,000, to be paid May 1, at which time the city takes title. The money has been raised by the sale of 4½ per cent municipal bonds.

Martin, A. F., has been elected superintendent of the Milford, Mass., sewer department.

Fallis, W. F., has been elected state highway engineer of North Carolina.

Pendergast, J. R., has been elected chief of police of Durham, N. C., succeeding the late K. E. Freeland.

Moore, Clifford, has been appointed consulting engineer of the Borough of Queens, New York City.

Cantine, E. I., has been elected state highway engineer of Oregon.

Fetherston, J. T., has begun suit for libel against the publishers of the New York American and Evening Journal, asking \$260,000 damages. This suit grew out of the discussion of a bill for the final disposition of New York's refuse, which was finally vetoed by the governor. The two newspapers named opposed the bill and in their columns attacked Commissioner Fetherston, charging that he was personally and financially interested in certain appliances used in incineration, which it was his intention to employ in the plant proposed by the bill.

Pullman, Raymond W., has been appointed chief of police of Washington, D. C.

Norris, Geo. W., has resigned as director of the department of wharves, docks and ferries of Philadelphia. He is succeeded by his former assistant, John Meigs.

Baldwin, Fred, has been appointed superintendent of waterworks of Flint, Mich.

Holloway, J. F., chief of the Morristown, N. J., police force, died April 11 after undergoing an operation for stomach trouble.

Neff, M. P., an assistant engineer in the Cincinnati, O., department of public service, died April 12.

Otto, John B., has been re-elected city engineer of Williamsport, Pa.

Cunningham, Robert J., county controller of Allegheny, has been appointed state commissioner of highways of Pennsylvania.

Connelly, J. A., and Harmon, D. G., have resigned from the Fort Worth, Tex., police department.

The following mayors have been elected in Colorado:

Loveland.—T. R. Norcross.  
Longmont.—R. H. Kiteley.  
Nederland.—D. G. Lawrence.  
Walsenburg.—Joseph O'Bryne.  
Greeley.—H. H. Harbaugh.  
Victor.—J. H. Williams.  
Evans.—Fred Alex.  
Breckenridge.—Arlington Fincher.  
Hugo.—Emmet Thompson.  
Limon.—Perry O. Wells.  
Lamar.—C. F. Cook.  
Louisville.—H. A. Moore.  
Lafayette.—Dr. V. W. Porter.  
La Junta.—John N. Lamb.  
Littleton.—James Maloney.  
Englewood.—A. Rivin.

Following officials have been elected: Highland Park, Tex.—Mayor, Perry G. Claiborne; alderman first ward, F. M. Gray; alderman second ward, Leon Blunt, Jr.; alderman third ward, Heber Page; alderman fourth ward, W. I. Ford; alderman at large, W. T. Harris, and marshal, H. C. Blount.

Dufur, Ore.—Mayor, C. H. Stoughton; treasurer, L. B. Thomas; recorder, Edith Douglas; councilmen, W. N. Evans and I. W. Moore; water commissioners, H. C. Dodds and T. W. Glavey.

Dallas, Ore.—E. C. Kirkpatrick, mayor; John L. Sweeney, W. L. Barber, Joseph Card and J. E. Miller, councilmen.



# NEW APPLIANCES

Describing New Machinery, Apparatus, Materials and Methods and Recent Interesting Installations.

## CONCRETE FORMS AND ACCESSORIES.

### For Walls, Foundations, Tunnels and Reservoirs.

"Hydraulic" pressed steel concrete forms are designed for retaining walls, foundations and walls of buildings, piers, tunnels, tanks, reservoirs and other concrete structures. The wall and foundation forms consist of uprights which are aligned and accurately spaced 3 feet 3 inches center to center by steel liners. Between these uprights are clamped steel faced plates. The advantages claimed for the forms are that any plate can be placed and removed at any time without disturbing any other plate and that uprights can be erected and aligned and reinforcing then installed before plates are put in place. Plates can be removed for cleaning out wall, inspecting reinforcing or other purposes just before concreting. They can be removed in 24 hours in good weather, leaving the uprights to brace the wall and using them on another part. Scaffolding can be fastened to the forms by means of easily adjusted brackets. The forms are light and rigid and may be handled by three men.

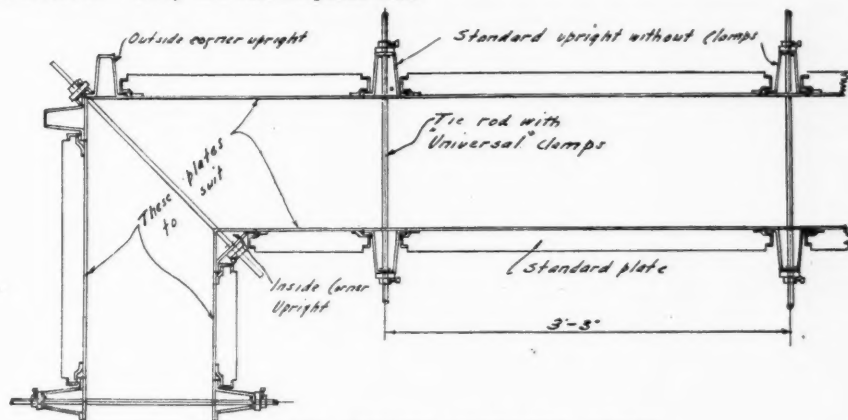
The uprights are of hollow pressed steel, 4 by 4½ inches and can be spliced together with steel splices and carried to any height. These uprights are spaced and aligned by means of channel steel liners broached to fit over the back of the upright and secured into keyhole slots by keys and wedge. The plates are of steel backed with 1¾-inch pine planking, the edges being protected and stiffened with channels and the ends being of steel angles welded to the plate. The clamps consist of a U-shaped channel of 1½-inch steel and are designed for firmness and easy handling. "Universal" tie clamps are used,

with plain round steel rods, which may be removed from the wall after setting and used again. By the use of additional wood plates a continuous hollow wall may be built up to 10 feet in height. Corners may be formed by means of special inside and outside corner uprights. Columns are formed with four corner plates.

"Hydraulic" pressed steel liner plates are used for lining a soft soil tunnel excavation. They are left in place and

tween uprights and the outside plate is of steel sections, 3.1416 feet wide, bolted together on flanges. The chute is formed by plates held to shape by turnbuckles.

The illustrations show the use of the wall forms and corner forms and also tunnel forms being used on the Wilson avenue tunnel, Chicago. These forms are made by the Hydraulic Pressed Steel Co., Cleveland, O.



WALL AND CORNER CONCRETE FORMS.

the brick or concrete lining built inside them. They are not intended to afford permanent shell protection, as they rust, but are designed to protect the brick or concrete from load until long after the necessary hardening. The plates are of ½-inch steel and, if evenly set, will support difficult loads. The advantages claimed for these plates are that they are all exact duplicates and that as they are light the erection may be accomplished easily. It is claimed that the expensive shield may be eliminated and that the tunneling is continuous and much faster.

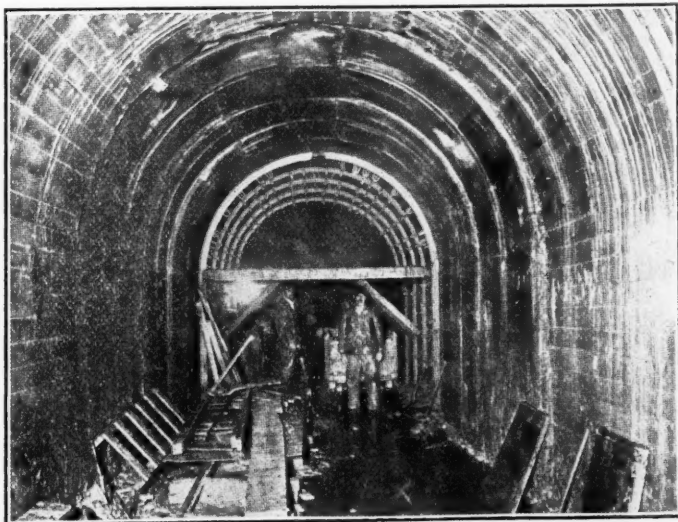
The "Hydraulic" silo and tank form is adjustable to any diameter from 6 feet up, one form only being needed. The concrete chute is formed at the same time as the tank, so that the construction is monolithic. Reinforcing can be held in place by the uprights. The forms consist of pressed steel uprights, 3.1416 feet in center, fastened in place by steel channel liners curved to the proper diameter. Inside steel plates are clamped be-

## GASOLINE-DRIVEN CENTRIFUGAL PUMPS.

### Small Pumps for Contractors and Municipal Departments.

The requirements of light pumping for various purposes by contractors and by street departments for such work as cleaning sewers are well met by a small portable gasoline-driven centrifugal pump. The Van Wie centrifugal pumps are designed for such uses and are made in a number of forms and sizes. The pump is of the panel type and the impeller, which is open arm, may be removed without disturbing the discharge pipe or interfering with alignment of pump and motor. The engine is equipped with waterproof coil, spark plug and carburetor of standard design. In cooling the engine, the water is taken from periphery of the pump and after passing through the water jacket of the engine cylinder is returned to the center of the pump so that the use of tank and circulating pump is obviated. Pump and motor are mounted on a common cast iron bed plate, so that alignment is assured. No thrust bearings are used on these pumps, the impeller being balanced against end thrust. The pump may be obtained mounted on wheels.

The "Van Wie Kid" has a 2-inch suction and 1½-inch discharge. The motor is 3-h.p., 2-cycle and has a speed variation of from 200 to 900 r.p.m., controlled by spark lever and throttle valve. This



USING "HYDRAULIC" STEEL FORMS ON CHICAGO TUNNEL.

size weighs 270 pounds. The capacity is 75 to 80 gallons per minute at 800 r.p.m. against a head of 30 feet. The capacity may be varied by manipulation of the throttle valve and the pump will operate efficiently against a load of from 2 to 45 feet. The "Van Wie Junior" has twice the capacity under the same conditions. The motor is 4-h.p., 2-cycle. The weight of the machine is 450 pounds. Larger pumps, mounted on trucks, vary from 300 to 1,200 gallons capacity for heads from 20 to 35 feet, direct-connected to 3½ to 24-h.p. gasoline engines.

Dredge pumps are similarly made, the dredge being of the overhanging type and the suction side being removable for inspection. The impeller is of the enclosed type. The pump is equipped with ball thrust bearing for end thrust. Two sizes of pumps for 10 to 25 cubic yards per hour are made for water, sand, mud and dirt pumping and three sizes with 25 to 65 cubic yards capacity for solids also.

The accompanying illustration shows the Van Wie Kid pump. These pumps are made by the Van Wie Pump Co., Syracuse, N. Y.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago—Peoria, Ill., has opened bids on 1,000 tons and Sacramento, Cal., on 10,000 tons. Quotations: 4-inch, \$25.50; 6 to 12-inch, \$23.50; 16-inch and up, \$23. Birmingham—Week has been quiet in water pipe market, but orders on hand justify continuation of 75 per cent operations. Quotations: 4-inch, \$20; 6-inch and up, \$18. New York—There is a dearth of municipal lettings. Binghamton, N. Y., awarded about 1,100 tons, mainly 20-inch, to the Warren Foundry & Machine Co. Quotations: Class B and heavier, \$22 to \$22.50 per net ton for 6-inch; Class A, \$23 to \$23.50.

**Lead.**—Quotations: New York, \$4.20; St. Louis, \$4.10.

**The Eureka Fire Hose Mfg. Co.,** New York, has lost its special salesman for New York and New Jersey, James Quinlan, who died April 10. Mr. Quinlan was 55 years old and had worked up to the position he held until his death from that of office boy during the 41 years he was with the company.

**The Kerr Turbine Co.,** Wellsville, N. Y., is issuing for general distribution bulletin No. 51, "Economy Geared Turbines," which explains the advantages often obtained by interposing gears between turbine and driven generator, pump, blower or pulley, and also explains the new method by which "Economy" turbine gears are so accurately hobbled that no grinding or polishing is necessary for finish. Gears made in the Kerr shops are said to be so quiet in operation that the gears of an "Economy" geared turbine really make no more noise than the windage of a direct-connected outfit.

Recent sales reported by the Kerr Turbine Co. include the following municipalities: Atlantic City, N. J., 18,000,000-gallon "Economy" turbo-pump; Baltimore, Md., 500-kw. "Economy" turbo-generator; Williamsport, Pa., 425-h.p. turbine for driving a pump; Youngstown, O., two 250-kw. turbo-alternators; and dredge "Columbia," Portland, Ore., two 1,000-h.p. geared turbines. Export orders include East Hull Gas Co., Groves, England, and Corporation Gas Works, Birkenhead, England.

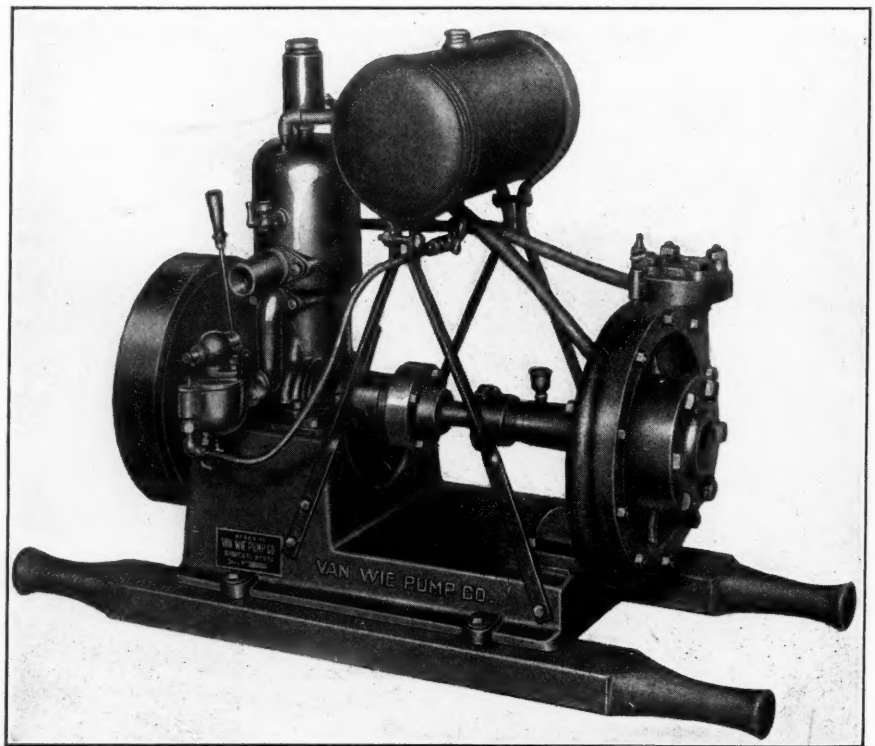
**Wallace & Tiernan Co., Inc.,** manufacturers of chlorine control apparatus and sanitary specialties, 136 Liberty street, New York City, announces that William J. Orchard has resigned as assistant sanitary engineer to the New Jersey state board of health, to become associated with the company. Mr. Orchard is a graduate in sanitary engineering from the Massachusetts Institute of Technology and previous to his connection with the New Jersey state board of health had been in the engineering departments of the Massachusetts state board of health and of the Metropolitan water and sewage commission of Massachusetts.

"Clean Streets" is the subject of a new booklet just issued for free distribution by Studebaker, of South Bend, Ind. It is written to give city and county clerks, city engineers, street cleaning departments, boards of works and officials a mass of helpful statistical information about street cleaning. Methods of street sweeping, sprinkling oil distribution on city and country roads are explained in easily understood formulas. For instance, the number of square yards sprinkled by different types and sizes of sprinklers,

the angles at which brushes of street cleaners should be set to get maximum results, and the easy conversion of water sprinklers into tree sprayers or oil sprinklers are discussed at length. The detailed costs of street cleaning per square yard per year offer material for interesting comparison by anyone who must keep watch over such expenditures. An important feature is the part devoted to the reports of a number of street cleaning departments.

**The Pioneer Asphalt Co.,** Lawrenceville, Ill., has just recently been organized to take over the assets, good will and formulas of the American Asphaltum & Rubber Co. and will resume the manufacture of the "Pioneer" brand of asphalts, making a specialty of products such as pipe coating, waterproofing, prepared expansion joint, filler, mastic, flux, etc. H. B. Pullar, formerly assistant manager and chief chemist for the American Asphaltum & Rubber Co. and later consulting chemist of Detroit, Mich., is general manager of the company, and the head office will be located in Lawrenceville. The plant has been remodeled to take care of the specialty business and has a capacity of about 25,000 tons per year.

**The Watson Wagon Co.,** Canastota, N. Y., has just issued a new booklet, "On the Job," showing Watson trailers in action. The photographs show very convincingly the versatility of the trailers and the wide variety of jobs and places in which they have been successfully used. Wagon trains of seven trailers are apparently "in the day's work" of the Watson wagon. Two of the most interesting illustrations are those of the wagons being used as asphalt trailers by New York City and on road jobs in New Jersey.



"VAN WIE KID" CONTRACTOR'S PUMP.



## PERSONALS

(Continued from page 604.)

Following have been elected in Montana:

Billings—Dr. Edwin A. Gerhart, mayor; A. J. Lundborg, J. Simineo, G. F. Sweeney, J. W. Lawson and Peter Hoe, councilmen.

Livingston—Dan. Short, mayor.

Forsyth—H. J. Huene, mayor; G. L. Swan, treasurer.

Glendin—Dr. A. A. Baker, mayor; R. D. Lowe and Thomas Keen, aldermen.

Anaconda—Edward O'Brien, mayor. Bozeman—John A. Luce, mayor; L. E. Fuller, E. J. Hines, L. W. Truitt and E. L. Holm, aldermen.

Burlington, Vt.—City clerk, M. C. Grandy; city engineer and surveyor, F. O. Sinclair; street commissioner for three years, F. E. Burgess; water commissioner for three years, Jules Simays; light commissioner for three years, Claude D. Graton; fire commissioner for three years, F. E. Perkins; police commissioner for three years, Edward Lavallee.

Fort Plain, N. Y.—W. J. Diefendorf, re-appointed sewer commissioner for five years; William Dillenback, sewer commissioner, four years, to succeed George Duffy, now water commissioner. The following appointments were made by President Smith: Vice-president, John Saltzman; committee on lights, Orley Roof; committee on sidewalks, Lehman Fox; committee on sewers, Thomas Temple; committee on streets, John Saltzman.

Niles, Mich.—Charles E. White, mayor; Barron Wetherby, clerk; Claude Smith, treasurer.

Centerville, Ia.—C. E. Campbell, mayor; John Koontz, chief of police; Ralph Stevenson, city clerk; S. W. Brant, fire chief; Alex. Conger, street commissioner.

Abbeville, S. C.—Councilmen, T. M. Miller, T. C. Beaudrot, G. W. Godfrey and J. Allen Long; Joe I. Johnson, chief of police; J. V. Elgin, chief of the fire department; T. C. Beaudrot, assistant chief, and E. M. Anderson, manager of the water and electric plant.

Following have been elected in Michigan:

Saginaw—Hilem F. Paddock, mayor; W. H. Reins, W. F. Jahnke and Robert J. Johnson, councilmen.

St. Ignace—W. G. Wing, mayor.

Grand Haven—Peter Van Ziffen, mayor; LeRoy Hendricks, Wm. Thielman, Claude Vander Veen and George DeYoung, aldermen.

South Haven—Jacob Niffenegger, mayor; E. I. Hewson, clerk.

Zeeland—G. Moeke, mayor; John Stall, D. DeBruyn, J. Hartgerink and J. Poest, aldermen.

Dowagiac—Martin Herold, mayor; L. J. O'Brien, city clerk.

Oronoko—Supervisor, W. H. Sylvester; clerk, C. L. Dilley; treasurer, Geo. Stemm; highway commissioner, Dick Ford; overseer of highways, J. Michael.

Buchanan—Supervisor, Harry H. Beck; clerk, Irenus Sparks; treasurer, Frank Chubb; highway commissioner, Iva Mitchell; overseer of highways, Joseph Tarbell.

Galien—Supervisor, Chas. A. Clark; clerk, Bert J. Babcock; treasurer, D. E. Ingles; highway commissioner, W. B. McLaren; overseer of highways, W. C. Hewitt.

Three Oaks—Supervisor, Geo. L. Stevens; clerk, Chas. P. Klute; treasurer, Geo. E. Seid; highway commissioner, G. L. Schelley; overseer of highways, Ed. Sittig.

Chikaming—Supervisor, Daniel Zeiger; clerk, William C. Baker; treasurer, William P. Glavin; highway commissioner, John Sweeney; overseer of highways, Abel Tatrow.

Weesaw—Supervisor, Clayton H. Smith; clerk, Francis H. Morley; treasurer, Wm. Renbarger; highway commissioner, John Kempton; overseer of highways, L. Prankert.

New Buffalo—Supervisor, J. C. Schwenk; clerk, Ferdinand F. Siegmund; treasurer, E. Walters; highway commissioner, Henry Horn; overseer of highways, L. Wittenberg.

Bainbridge—Supervisor, Leslie A. Stuart; clerk, Edwin C. Elgas; treasurer, Frank C. Arent; highway commissioner, Jacob C. Weber; overseer of highways, B. H. Killin.

Bertrand—Supervisor, Albert E. Houseworth; clerk, Raymond W. Travis; treasurer, Fred A. Koenigshof; highway commissioner, Chester Sheldon; overseers of highways, Fred Salisbury, John Best.

Berrien—Supervisor, C. A. Smith; treasurer, W. E. Parker; highway commissioner, Joseph Reams; overseer of highways, Jacob Jones.

Benton—Supervisor, Lot F. Sutherland; clerk, Kenneth Johnson; treasurer, Peter Dukescherer; highway commissioner, Loren Snyder; overseer of highways, Wm. Terwilleger.

Hagar—Supervisor—James A. Merrill; treasurer, Chas. O. Patterson; highway commissioner, Frank Clapsaddle; overseer of highways, C. H. Brace.

Following have been elected in Maine:

Vinalhaven—Selectmen, T. C. Creed, Lyford Pierce, H. F. Raymond; town clerk, O. P. Lyons; treasurer, L. R. Smith.

Industry—Selectmen, Frank B. Eveleth, J. F. Collins, Elmer Robbins; town clerk; F. W. Patterson; treasurer, B. W. Rackliff.

Avon—Selectmen, E. A. Peary, D. W. Toothaker, M. T. Toothaker; town clerk, Linwood Beal; treasurer, J. A. Norton; tax collector, Archie Toothaker.

Hiram—Selectmen, Chas. J. Small, Monroe French, Frank W. Merrifield; town clerk, Chas. Cotton; treasurer, Chas. Cotton.

West Bath—Selectmen, I. W. Coombs, Lincoln Williams, C. W. Lee; town clerk, Ernest E. Rose; treasurer, W. H. Larrabee.

Verona—Selectmen, R. E. Grey, W.

A. Delano, Ralph Hopkins; town clerk, A. H. Whitmore; treasurer, R. W. Delano.

Mt. Desert—Selectmen, Ernest A. Atwood, Fred H. Parker, Orrin A. Donnell; town clerk, Lyman H. Somes; treasurer, Morrill T. Ober.

Oxford—Selectmen, O. F. Bradford, W. E. Gammon, A. D. Thayer; town clerk, Roscoe F. Staples; town agent, Dr. E. B. Holden; treasurer, Roscoe F. Staples.

Bingham—Selectmen, Samuel A. Smith, Henry Cooley, Orison Gordon; town clerk, Willis B. Goodrich; treasurer, E. W. Moore.

Knox—Selectmen, B. C. Bryant, P. W. Berry, A. S. Bailey; town clerk, E. L. Blanchard; treasurer, C. J. Rich.

China—Selectmen, O. F. Sproul, H. L. Fuller, F. D. Raad; town clerk, W. W. Washburn; treasurer, F. A. Doe.

Eustis—Selectmen, Guy Sedgley, of Stratton; F. R. Wing, of Stratton; E. F. Look, of Eustace; town clerk, Merl A. Butts; treasurer, H. H. Landers, of Stratton.

Salem—Selectmen, Edgar Wills, J. B. Harris, J. A. Ellsworth; town clerk, Edgar Wills; treasurer, W. E. Eash.

Friendship—Selectmen, F. T. Orne, A. O. Wallace, W. J. Whitney; town clerk, C. W. Wotton; treasurer, A. B. Cook.

Sweden—Selectmen, W. D. Moulton, W. M. Flint, E. H. Woodbury; town clerk, E. S. Plummer; treasurer, C. A. Saunders.

Moscow—Selectmen, J. B. Whitney, H. F. Baker, Frank P. Whitney; town clerk, J. B. Whitney; treasurer, E. A. Baker.

Temple—Selectmen, J. W. Colby, F. H. Welch, W. A. Deane; town clerk, Archie I. Sargent; treasurer, Clarence F. Hodgkins.

Freeman—Selectmen, E. E. Carvill, U. G. Weymouth, G. S. Peabody; town clerk, Melvin Huff; treasurer, J. E. Burbank.

Bowdoin—Selectmen, N. Doughty, W. E. Tarr, W. L. Maloon; town clerk, E. E. Buker; town agent, N. Doughty; treasurer, Geo. L. Coombs.

Lovell—Selectmen, Frank Harmon, R. G. Charles, G. W. Adams; town clerk, W. B. Stone; treasurer, E. T. Stearns.

Trenton—Selectmen, John D. Remick, W. G. Haynes, R. G. Leland; town clerk, Frank Dunbar; treasurer, T. J. Hopkins.

Waterford—Selectmen, Willard W. Abbott, Addison Millett, Elbridge B. Pike; town clerk, L. R. Rounds; town agent, A. G. Morse; treasurer, C. D. Morse.

Southwest Harbor—Selectmen, Geo. R. Fuller, S. N. Spurling, Donald K. Mayo; town clerk, Arthur L. Somes; treasurer, Arthur L. Somes.

Brooksville—Selectmen, Fred J. Perkins, L. P. Stover, Everett L. Gray; town clerk, Geo. H. Tapley; town agent, O. L. Tapley; treasurer, Wm. H. Stover.

Penobscot—Selectmen, M. C. Duren, W. M. Sellers, Homer Lowell; town clerk, A. P. Leach; town agent, M. C. Duren; treasurer, M. A. Wardwell.

# ADVANCE CONTRACT NEWS

## ADVANCED INFORMATION BIDS ASKED FOR

## CONTRACTS AWARDED ITEMIZED PRICES

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

### BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET AND ROADS				
S. D.	Mellette	Noon, May	1.. Grading 8 1/2 miles of road	F. P. Haven, Clk.
Miss.	Starkville	May	1.. Highways, including placing Novaculite	E. C. Thomas, Engr.
Minn.	Olivia	10 a.m., May	1.. Grading portions of various state roads	M. E. Sherin, Chr. Committee.
Mich.	Necosta	4 p.m., May	1.. Constructing various state reward roads	Edward Dresser, Co. Clk.
N. D.	Grafton	May	1.. Constructing sidewalks, alleys and cross walks	J. H. Johnson, City Aud.
Pa.	Wilkes-Barre	May	1.. Street paving to cost about \$10,000	Smith & Wells, Engrs.
Kan.	Newton	May	1.. 30,000 yds. paving	A. J. Duff, Mayor.
Kan.	Salina	May	1.. Constructing 14 blocks asphaltic concrete and brick paving	C. Banker, City Clk.
O.	Findlay	May	1.. Paving with standard material on concrete base, cost \$90,000	Joseph Page, City Clk.
Wash.	Olympia	May	1.. Constructing nine miles highway	Wm. R. Roy, State Hwy. Com.
Ind.	Brownstown	May	1.. Five miles concrete road; one crushed stone and gravel road	Albert Leudtke, Co. Aud.
Pa.	Rousville	May	1.. 9,200 yds. brick paving, 11,200 ft. concrete curb	G. H. Brush, Boro. Clk.
Wis.	Janesville	May	1.. 3,911 yds. asphalt macadam	C. V. Kerch, City Engr.
O.	Jeromesville	May	1.. Grading, curbing, paving with brick or other first-class pavement	M. L. Hosler, Vil. Clk.
Fla.	Pensacola	11 a.m., May	1.. Macadam road construction	H. R. Stanford, Bur. Yds. & Docks, Washington, D. C.
Minn.	Henderson	9 a.m., May	1.. Road grading	J. R. Beatty, Comr. & District State Engineer.
N. Y.	Oswego	May	1.. 5,400 yds. brick paving and 2,300 yds. brick resurfacing	J. F. Flanagan, City Engr.
W. Va.	Wayne	May	1.. Three miles hard surface road construction	Sam J. Crum, Clerk.
O.	Irondale	May	1.. Paving two streets with brick or concrete	F. A. Ross, Clk. Pub. Service.
Minn.	Mankato	2 p.m., May	1.. Constructing 1,400 ft. of road	B. M. Gallagher, Dist. Hwy. Engr.
O.	Youngstown	1.30 p.m., May	3.. 5,045 ft. waterbound slag macadam road	A. L. Schmidt, Engr.
Ia.	Centerville	7.30 p.m., May	3.. Constructing cement sidewalks, intersections and crossings	R. O. Stephenson, City Clk.
N. D.	New Rockford	3 p.m., May	3.. For grading roads	Jas. McLachlin, Co. Aud.
Cal.	Los Angeles	2 p.m., May	3.. Grading, building culverts and laying concrete pavement	H. J. Lelande, Clk. Bd. Supv.
Minn.	Worthington	2 p.m., May	3.. Grading and turnpiking road	Gus. Swanberg, Co. Aud.
Ind.	Scottsburg	1 p.m., May	3.. Constructing three gravel roads	Robert Blunt, Co. Aud.
Ind.	Nashville	1 p.m., May	3.. Constructing stone and gravel road	John McGee, Co. Aud.
Ind.	Brownstown	2 p.m., May	3.. Two concrete roads and one stone and gravel road	Albert Leudtke, Co. Aud.
Ind.	English	2 p.m., May	3.. Stone road construction	J. B. Enlow, Co. Aud.
Ind.	Jeffersonville	10 a.m., May	3.. Constructing bituminous macadam road	G. W. Stoner, Co. Aud.
Ind.	Kentland	2 p.m., May	3.. Constructing macadam road	S. R. Sizelove, Co. Aud.
Minn.	St. Paul	10.30 a.m., May	3.. Paving with creosoted pine blocks and sandstone blocks	A. Hohenstein, Pur. Agt.
Pa.	Mt. Pleasant	8 p.m., May	3.. Grading, curbing and paving	A. S. Oberhalt, Boro. Sec.
N. J.	Perth Amboy	8.30 p.m., May	3.. Grading and curbing	Geo. M. Adair, St. Comr.
R. I.	Providence	Noon, May	3.. Furnishing 450,000 gallons road oil	State Board Public Works.
Pa.	Titusville	May	3.. Constructing cement sidewalks	W. M. Dame, City Clk.
Miss.	Friars Point	May	3.. Constructing three miles of granite road	S. F. Carr, Clk. Clarksdale.
Mich.	Kalamazoo	May	3.. 20,000 yds. asphaltic concrete and 613,000 paving blocks	C. L. Miller, City Clk.
Wash.	Ephrata	May	3.. Seven miles road, cost about \$80,000	C. T. Sanders, Co. Aud.
N. J.	Linden	8 p.m., May	3.. Grading and paving	J. L. Bauer, Co. Engr.
Pa.	Mt. Pleasant	8 p.m., May	3.. Grading, curbing and paving	A. S. Oberholdt, Boro. Secy.
Wash.	Olympia	May	3.. Surfacing with crushed stone 11 miles of Pacific highway	Wm. R. Roy, State Hwy. Com.
Pa.	Oil City	May	3.. 8,400 yds. brick pavement and 1,600 yds. brick or wood block	B. B. Weber, City Engr.
Kan.	Hutchinson	May	3.. Constructing five miles of road	Geo. W. Lee, Co. Clk.
Pa.	Philadelphia	Noon, May	3.. Paving along river front	Geo. W. Norris, Director.
Minn.	Minneapolis	11 a.m., May	3.. Regrading and macadamizing parts of four roads	Al P. Erickson, Co. Aud.
Wash.	Ellensburg	May	3.. Paving with brick, asphalt or warrenite, 2.5 miles	M. M. Emerson, Co. Engr.
Kan.	La Crosse	Noon, May	3.. Regrading several county roads	M. M. Wilson, Co. Clk.
Ind.	Goshen	1 p.m., May	3.. Grading, paving and improving road	J. W. Brown, Co. Aud.
Ind.	Versailles	Noon, May	3.. Grading, paving and improving several roads	J. F. Lechard, Co. Aud.
Ind.	Vincennes	10 a.m., May	3.. Paving	Board Pub. Wks.
Ia.	Oskaloosa	8 p.m., May	3.. Building cement walks at school house	L. T. Shangle, Sec. Bd. Dir.
N. D.	Aneta	May	3.. Building concrete walks and crossings	C. E. Fodness, City Aud.
N. D.	Rolla	6 p.m., May	3.. Laying concrete sidewalks in several streets	F. Hamilton, City Aud.
Wash.	Olympia	2 p.m., May	3.. Surfacing with crushed rock	County Commissioners.
Ia.	Alexandria	May	3.. 25 miles gravel road	L. W. Sylvester, Engr.
N. J.	N. Brunswick	2.30 p.m., May	3.. Constructing bituminous concrete road	A. B. Fox, Co. Engr., Perth Amboy.
Tex.	Kountze	11 a.m., May	3.. Highway improvements	W. W. Gies, Co. Judge.
Ia.	Donnellson	8 p.m., May	3.. Crosswalks and other concrete work	C. W. Ott, City Aud.
Minn.	Worthington	2 p.m., May	3.. Grading, turnpiking and concrete culverts	G. Swanberg, Nobles Co. Aud.
Mich.	Jackson	7 p.m., May	4.. Paving with creosoted block, asphaltic concrete, sheet asphalt or brick	C. E. Chappell, City Mgr.
Wis.	Plymouth	8 p.m., May	4.. 21,000 yds. permanent pavement on concrete base and 10,745 ft. curb and gutter	H. A. Lueake, City Clk.
N. Y.	Newburgh	May	4.. Street paving	City Clerk
N. D.	Bismarck	2 p.m., May	4.. Four gasoline engines and graders	County Comrs.
Ind.	Kokomo	10 a.m., May	4.. Improving highways	E. B. Swift, Howard Co. Aud.
Fla.	Key West	11 a.m., May	4.. Eight-ton gas engine road roller	E. L. Pierce, City Engr.
Ind.	Rensselaer	2 p.m., May	4.. Grading, paving and improving roads	J. P. Hammond, Co. Aud.
Wash.	Mt. Vernon	May	4.. Two course concrete pavement to cost \$31,400	A. L. Strong, Co. Engr.
Ind.	Kokomo	2 p.m., May	4.. Constructing sidewalk and paving roadway	E. B. Swift, Co. Aud.
Ind.	Marion	May	4.. Grading, draining and paving roads	E. H. Kimball, Co. Aud.



## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
La.	Lake Charles	11 a.m., May	4.. Construction work on four highways, about 35 miles of grading	E. C. House, Clk. Police Jury.
S. D.	Clark	May	4.. Constructing road grade	A. J. McAlpine, Co. Aud.
N. J.	Trenton	2.30 p.m., May	4.. Bituminous concrete surface on macadam highway	T. Tobish, Co. Engr., Court House.
O.	Columbus	Noon, May	4.. Street improvements, with brick and asphalt	G. A. Borden, Dir. P. S.
Tenn.	Jackson	May	4.. 35,000 yds. first class pavement	W. F. Alexander, City Clk.
Wash.	La Conner	May	4.. Concrete paving to cost about \$10,000	J. S. Church, Town Clk.
Wis.	Superior	1 p.m., May	4.. Improving and repaving several streets	Board Public Works.
N. J.	Paterson	4 p.m., May	4.. Macadamizing streets	H. J. Harder, City Engr.
Pa.	Philadelphia	11 a.m., May	4.. Ugitte	J. T. Vogdes, Ch. Engr. Fairmount Park Comrs.
Ind.	Madison	1 p.m., May	4.. Constructing gravel road	W. F. Kinser, Co. Aud.
Ind.	Decatur	10 a.m., May	4.. Constructing macadam road	T. H. Baltzell, Co. Aud.
La.	Waukon	Noon, May	4.. Grading road and constructing culverts	Harry O. Orr, Co. Aud.
Ind.	Martinsville	Noon, May	4.. Road construction in three townships	Sam Watson, Co. Aud.
Ind.	Marion	2 p.m., May	4.. Constructing three roads	E. H. Kimball, Co. Aud.
Ind.	Vincennes	May	4.. Constructing three miles gravel road	J. J. Muentzer, Co. Aud.
Ind.	Knox	Noon, May	4.. Constructing two roads	C. W. Weninger, Co. Aud.
Ind.	Boonville	10 a.m., May	4.. Building rock roads	G. H. Bass, Co. Aud.
Ind.	Bloomington	2 p.m., May	4.. Constructing four macadam roads	G. E. Kidd, Co. Aud.
Ind.	Monticello	10 a.m., May	4.. Constructing gravel and crushed stone roads	A. G. Fisher, Co. Aud.
Ind.	Bedford	1 p.m., May	4.. Grading, paving and improving road	E. W. Edwards, Co. Aud.
Ind.	Brazil	7.30 p.m., May	4.. Street paving	F. K. DeArme, City Clk.
Mich.	Jackson	7.30 p.m., May	4.. 18,600 yds. first class street paving	A. W. D. Hall, City Engr.
O.	Columbus	Noon, May	5.. Improving and macadamizing road	John Scott, Clk. of Com.
Minn.	Thief Riv. Falls	3 p.m., May	5.. Graveling three miles of road	T. P. Anderson, Co. Aud.
N. J.	Freehold	11 a.m., May	5.. Road construction	E. D. Cooper, Co. Engr., 63 Broad St., Redbank.
N. D.	Bismarck	2 p.m., May	5.. Road construction	Board of Co. Comrs.
N. Y.	Brooklyn	May	5.. Regulating, curbing and paving with asphalt, ten jobs	L. H. Pounds, Boro. President.
Wis.	Superior	1 p.m., May	5.. Paving with first class pavement	Board Public Works.
Mich.	Ann Arbor	May	5.. 20,000 yds. first class paving	Manley Osgood, City Engr.
Miss.	Meridian	10 a.m., May	5.. Resurfacing nine miles of road with oil-sand filler	H. F. Broach, Chr. Rd. Com.
O.	Columbus	noon, May	5.. Road improvement	J. Scott, Clk. Franklin Co. Bd. Comrs.
N. Y.	Albany	1 p.m., May	5.. 18 state highways, about 100 miles	E. Duffey, State Hwy. Comr.
N. D.	Kulm	2 p.m., May	5.. Concrete sidewalks	J. Schuldheisz, City Aud.
Minn.	Duluth	May	5.. 53 miles highway construction	O. Halden, Co. Aud.
Ind.	Evansville	10 a.m., May	6.. Rock road	C. P. Beard, Co. Aud.
Ind.	Huntington	10 a.m., May	6.. Building county line gravel road	Harold Guthrie, Co. Aud.
Pa.	Uniontown	Noon, May	6.. Furnishing 9,300 gallons Tarvia X	Harry Kissinger, Controller.
La.	Dubuque	8 p.m., May	6.. About 20,000 yds. first class pavement, 9,000 ft. curb and gutter	J. J. Shea, Vil. Rec.
N. Y.	New York	3 p.m., May	6.. Paving with asphaltic concrete	Dept. of Parks, Zabrowski Mansion, Bronx.
O.	Columbus	Noon, May	7.. Improving and macadamizing roads	John Scott, Clk. of Comrs.
Ind.	Mt. Vernon	2 p.m., May	7.. Grading, paving and improving road	J. R. Haines, Co. Aud.
Minn.	Duluth	10 a.m., May	7.. Grading and otherwise improving seven streets	C. S. Palmer, Clk.
N. J.	Madison	8 p.m., May	7.. 850 ft. concrete sidewalk and 500 ft. curb and gutter	J. E. Pierson, Chr. St. Com.
Ind.	Lebanon	May	7.. Constructing county line road, estimated cost \$3,900	Boone County Comrs.
O.	Toledo	10 a.m., May	7.. Furnishing and delivering Glutrin and other surface treatment material	C. J. Sanzenbacher, Co. Aud.
O.	Columbus	noon, May	7.. Road improvement	J. Scott, Clk. Franklin Co. Bd. Comrs.
Ind.	Plymouth	May	7.. 20 1/2 miles gravel roads	A. W. Thompson, Marshall Co. Supt.
Ind.	Bremen	8 p.m., May	7.. 16 blocks paving, part brick	T. F. Knoblock, Clk.
Ind.	Corydon	2 p.m., May	7.. Grading, paving and improving road	J. L. O'Bannon, Co. Aud.
N. D.	Wahpeton	2 p.m., May	8.. Constructing and grading about three miles of road	J. R. Johnson, Clk. of Supv.
Del.	Rehoboth	May	8.. Constructing boardwalk	Walter Burton, Secretary.
Ind.	Indianapolis	10 a.m., May	8.. Street improvements	W. T. Patten, Marion Co. Aud.
Ind.	Richmond	11 a.m., May	8.. Piles for pike	L. S. Bowman, Wayne Co. Aud.
O.	Bowling Green	10 a.m., May	10.. Grading and macadamizing road	County Auditor.
Ind.	Peru	Noon, May	10.. Constructing roads	F. K. McElheny, Co. Aud.
Ind.	Brownstown	Noon, May	10.. Grading, paving and improving roads, three jobs	Albert Luedtke, Co. Aud.
Ala.	Russellville	May	10.. 18 miles graded and drained and part gravelled	S. J. Petree, Chr. Court Co. Revenue.
D. C.	Washington	2 p.m., May	10.. Paving material for fiscal year	District Commissioners.
N. Y.	Albany	1 p.m., May	11.. Repairing about 330 miles state highways	E. Duffey, State Hwy. Comr.
Tex.	Kaufman	1 p.m., May	11.. Constructing system of permanent roads and bridges; cost about \$200,000	J. A. Cooley, Co. Judge.
N. D.	Cooperstown	May	11.. One elevator road grader with plow and disc plow	H. S. Rearick, Co. Aud.
Pa.	Washington	May	11.. Brick for 52,000 yds. paving; constructing eight miles of road	County Commissioners.
Md.	Cambridge	May	11.. Two miles shell macadam road	R. H. Dixon, Jr., Rd. Engr.
Md.	Frederick	May	11.. Building 1.5 miles state-aid highway	J. W. Holton, Pres. Co. Comrs.
N. Y.	Binghamton	4 p.m., May	12.. Bituminous top concrete pavement	D. W. Foster, Clerk.
O.	Toledo	May	14.. Grading and macadamizing with bituminous binder, 1.6 miles road	C. J. Sanzenbacher, Co. Aud.
O.	Cincinnati	May	14.. Road repairs	Hamilton Co. Comrs.
N. D.	Wahpeton	10 a.m., May	15.. Constructing and repairing highways	Mons Hauge, Clk. Supv.
Vt.	Burlington	2 p.m., May	15.. Constructing walks, curbs and gutters	Board of Street Comrs.
Kan.	Newton	May	15.. 30,000 sq. yds. various paving	F. E. Devlin, City Engr.
La.	Baton Rouge	Noon, May	15.. Paving two streets	J. J. Mundinger, City Engr.
N. D.	Williston	May	15.. Road grading	E. C. Landis, Clerk.
La.	Central City	1 p.m., May	17.. Grading and paving with gravel, three streets	E. W. Penly, Town Clk.
La.	Franklin	May	17.. Constructing 50 miles shell and gravel or gravel roads	Chas. M. Frost, Chr. Pol. Jury.
Wash.	Colfax	May	17.. Constructing permanent highway, cost about \$28,000	A. R. Metz, Co. Aud.
Ind.	Frankfort	2 p.m., May	18.. Gravel road	E. Spray, Clinton Co. Aud.
S. C.	Charleston	1 p.m., May	18.. 65,000 yds. first class paving including 25,000 yds. wood block	H. Dingle, City Engr.
N. Y.	Albany	1 p.m., May	18.. Repairing highways in 24 counties	Edwin Duffey, Comr.
O.	Mansfield	2 p.m., May	20.. Repairing and improving road	John A. Dalton, Richmond Co. Aud.
Minn.	Grygla	May	20.. Road construction	C. G. Stemmoen, Twn. Clk.
La.	Grinnell	2 p.m., June	3.. 83,350 yds. paving, 64,770 ft. curb and gutter, 11,300 yds. grading and 29,000 lbs. castings	A. C. Harriman, City Clk.
Tex.	McKinney	June	7.. Constructing about 215 miles gravel, macadam and concrete roads	John Mead, Co. Engr.
Miss.	Hazelhurst	June	7.. About \$50,000 worth gravel roads construction	X. A. Kramer, Engr. Magnolia
O.	Struthers	Noon, June	9.. Brick pavements on two streets	Jonah Richards, Vil. Clk.
SEWERAGE				
N. C.	Elizabeth City	May	1.. Concrete sewer	J. S. Whitehurst, City Engr.
Md.	Laurel	2 p.m., May	1.. Sewer system and disposal plant	G. W. Waters, Jr., Mayor.
Okl.	Afton	May	1.. Storm and sanitary sewer system, estimated cost \$37,000	City Clerk.
Ill.	Chicago	11 a.m., May	1.. About 1,020 ft. 10-in. tile sewer	L. E. McGann, Comr. P. W.
Ill.	Chicago	11 a.m., May	3.. Adjusting sewer manholes and catch basins and connecting catch basin inlets	F. J. Glackin, Sec. B. L. I.
Ind.	Crown Point	8 p.m., May	3.. Sewer construction in two streets	H. V. Parry, City Clk.

## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
N. J.	Perth Amboy	8.30 p.m., May	3.. 12-in. pipe sewer .....	Geo. M. Adair, Comr. Sts.
N. Y.	Charlotte	10.30 p.m., May	3.. Sewer construction .....	R. E. Gaskin, Engr., 55 Tri- angle Bldg., Rochester.
Minn.	Duluth	10 a.m., May	3.. Constructing sanitary sewers .....	O. S. Palmer, Clerk.
Ia.	Ames	7.30 p.m., May	3.. Constructing sanitary sewers and subdrains.....	A. B. Maxwell, City Clk.
Pa.	Indiana	May	3.. 1.5 miles 6 and 8-in. pipe sewer construction.....	Thos. Pealer, City Engr.
Ia.	Jewell Junction	May	3.. Constructing sanitary sewers and disposal plant.....	M. J. Severson, Town Clk.
O.	Salem	Noon, May	3.. Sanitary sewer, vitrified pipe .....	R. N. Russell, Dir. P. S.
Ia.	Tripoli	2 p.m., May	3.. Sewers, disposal plant and outlet sewers.....	H. W. Buckhaus, City Clk.
Minn.	St. Paul	10.30 a.m., May	2.. Vitrified sewer pipe .....	A. Hohenstein, Pur. Agt.
Ind.	South Bend	10 a.m., May	4.. Pipe sewer .....	Board Public Works.
Wis.	Green Bay	10 a.m., May	4.. Constructing 12 to 42-in. sewer.....	City Clerk.
N. Y.	Brooklyn	11 a.m., May	4.. Sanitary outlet sewer, storm outlet sewer, force main and superstructure for pumping station.....	L. H. Pounds, Boro. Pres.
N. Y.	Rochester	4 p.m., May	5.. Sewer construction .....	R. E. Gaskin, Engr., 55 Tri- angle Bldg.
N. J.	Irvington	8 p.m., May	5.. 550 ft. 8-inch sewer, 2 manholes, 1 flush tank.....	I. J. Casey, Jr., Town Engr.
N. Y.	Brooklyn	11 a.m., May	5.. Sewer construction, including about 1,200 ft. brick and pipe sewers, 7 manholes and 21 sewer basins.....	L. H. Pounds, Boro. Pres.
Minn.	New Ulm	5 p.m., May	5.. Storm and sanitary sewers.....	Wm. Backer, City Clk.
Ia.	Storm Lake	May	5.. Constructing five drain ditches.....	W. W. Bennett, Co. Aud.
N. J.	Newark	3.30 p.m., May	6.. Sewer construction .....	Morris R. Sherrerd, Ch. Engr.
Fla.	West Palm Beach	May	7.. 21,335 ft. 8 to 12-in. sewers, manholes, flush tanks, etc.	A. M. Lopez, City Clk.
O.	Toledo	May	7.. 3.3 miles 8 to 30-in. vitrified pipe sewers.....	C. J. Sanzenbacher, Co. Aud.
Ia.	American Falls	May	7.. Sewer construction, including 18,900 ft. 8 and 12-in. pipe and 30 flush tanks .....	O. F. Crowley, VII. Clk.
Tex.	Houston Heights	May	10.. Storm sewers, inlets, catch basins, etc.....	A. E. Marmion, Mayor.
Conn.	Bridgeport	May	10.. Constructing sewers in two streets.....	Alfred H. Terry, City Engr.
D. C.	Washington	2 p.m., May	10.. Castings, sewer pipe and sewer brick for fiscal year.....	District Commissioners.
Utah	Salt Lake City	10 a.m., May	11.. Sewer construction .....	City Engineer.
N. J.	Newark	2 p.m., May	11.. Sections of main intercepting sewer .....	Passaic Valley Sewerage Com.
Ark.	Siloam Springs	May	12.. Sanitary sewer system to cost about \$50,000.....	R. J. Alfrey, Sec. Bd. Imp.
Kan.	Valley Falls	May	12.. Sewers and sewage disposal plant.....	Geo. Harman, City Clk.
L. I.	Huntington	May	14.. Sewers and sewage disposal plant.....	C. M. Felt, Sec. Sewer Comrs.
S. C.	Walterboro	May	14.. Constructing sewer system, including six miles 8 to 15- inch pipe .....	H. S. Jaudon Engrg. Co., Box 582, Savannah, Ga.
Cal.	San Diego	11 a.m., May	15.. Sewer system at Naval Radio station.....	Commanding Officer, Naval Coal Depot.
Ind.	South Bend	10 a.m., May	15.. 2,970 ft. 48 to 60-in. sewer to be laid about 20 ft. deep..	V. C. Sweeney, Clk. Board.
N. Y.	Olean	May	15.. 8,000 ft. 10 to 18-in. vit. sewer.....	A. T. Bunce, City Engineer.
N. J.	New Brunswick	May	19.. Sewer construction .....	Board of Aldermen.
Pa.	Wilkes-Barre	May	25.. Constructing brick, segment block and terra cotta pipe sewers .....	Fred H. Gates, City Clk.
Ind.	Hartford City	2 p.m., May	25.. Furnishing and laying 3,999 ft. of 18-in. tile; doing other drainage ditch work.....	F. P. Wallace, Co. Surveyor.
Wis.	Ripon	4 p.m., May	31.. Reconstructing bed on sewer farm.....	J. W. Pierce, City Clk.
O.	Struthers	Noon, June	9.. Constructing storm water and sanitary sewers.....	Jonah Richards, VII. Clk.

## WATER SUPPLY

D. C.	Washington	11 a.m., May	1.. Installing water system at Crow Agency, Montana.....	J. E. Houston, Depot Q. M.
Ill.	Carlisle	2 p.m., May	1.. Laying 9,200 ft. 2 and 4-in. pipe with fittings and con- nections .....	C. Norcross, Mayor City Clerk.
Colo.	Montrose	May	1.. Main extensions .....	G. W. Walters, Jr., Mayor.
Ida.	Laurel	May	1.. Water works improvements, including laying of 3 3/4 miles of 2-in. to 8-in. main.....	A. E. Carver, VII. Recorder.
Minn.	Fairfax	7.30 p.m., May	1.. Drilling 6-inch well.....	A. C. Kuyper, City Clk.
Ia.	Pella	May	1.. Extensions to water mains .....	Curtis Stanton, Supt.
N. Y.	Newburgh	7 p.m., May	3.. Laying about 4,200 ft. 6-inch c. i. pipe.....	J. F. Byxbee, Jr., City Engr.
Cal.	Palo Alto	May	3.. 22,335 ft. 4 and 6-in. c. i. pipe, 29 hydrants, valves and trench excavation .....	W. B. Gardner, Town Clk.
Ia.	Morning Sun	1.30 p.m., May	3.. Water works system complete with tower and pump.....	U. S. Reclamation Service.
Cal.	Los Angeles	2 p.m., May	4.. Furnishing and erecting riveted steel pipe.....	W. H. Patterson, Town Clk.
Wash.	Riverside	May	4.. Constructing water works system, cost about \$9,500.....	Robert Adamson, Comr.
N. Y.	New York	10.30 a.m., May	4.. 10,000 ft. 3-inch wrought iron pipe.....	A. P. Romer, City Clk.
Minn.	Eveleth	5 p.m., May	4.. Relaying service pipes and replacing wrought iron pipes with cast iron .....	Wm. Williams, Comr. Gas, Water & Elec.
N. Y.	New York	2 p.m., May	5.. Furnishing and delivering c. i. pipe, castings, valves and double nozzle fire hydrant .....	Wm. Becker, City Clk.
Minn.	New Ulm	May	5.. Furnishing materials and laying water mains and placing gates and hydrants .....	Jos. B. Thomas, Supply Comr.
Mo.	St. Louis	Noon, May	5.. Two gate valves .....	J. R. Langan, Pur. Agt.
Mo.	Kansas City	2 p.m., May	5.. 20,000-gallon centrifugal pump .....	A. E. Tuttle, City Clk.
Colo.	Montrose	May	6.. Extension of water works system.....	J. Harker, Pres. Bd. VII. Trus.
N. Y.	Gilbertsville	May	6.. Constructing a storage reservoir .....	J. Kunz, Clk. City Comm.
O.	Middletown	Noon, May	7.. 136 tons 16-in. c. i. pipe, 20 tons 8-in., 50 tons 6-in., Class C, 4 tons fittings.....	Village Clerk.
Ill.	Stronghurst	7.30 p.m., May	7.. Furnishing deep well pump.....	Town Clerk.
Minn.	Cottonwood	May	8.. Water works improvements.....	Secy. Water Works Committee
Ont.	Ottawa	5 p.m., May	12.. Electrically operated pumping engine .....	U. S. Reclamation Service.
Cal.	Los Angeles	2 p.m., May	12.. Furnishing needle valve outlets for Roosevelt reservoir.....	J. S. Jaudon Engrg. Co., Box 582, Savannah, Ga.
S. C.	Walterboro	May	14.. Water system, sewer system and electric plant.....	Commanding Officer, Naval Coal Depot.
Cal.	San Diego	11 a.m., May	15.. Water works system at Naval Radio station.....	John D. Davidson, Sec. Bd. Water Com.
N. Y.	Binghamton	May	15.. Cross compound pumping engine of 10,000,000 gallons daily capacity. ....	

## LIGHTING AND POWER

Ind.	Jeffersonville	May	1.. Change of date for street lighting bids.....	City Clerk.
S. C.	Walterboro	May	14.. Electric light system .....	J. S. Jaudon Engrg. Co., Box 582, Savannah, Ga.

## FIRE EQUIPMENT

Pa.	Minersville	8 p.m., May	1.. 300 ft. 2-ply fabric fire hose.....	Fire Com., Town Council.
O.	Akron	Noon, May	1.. Alterations to engine house.....	B. P. Stein, Dir. Pub. Safety.
N. Y.	Albany	3 p.m., May	3.. Two automobile combinations, police patrol automobile, motor cycle .....	I. Wachsman, Sec. Bd. Con- tract & Supply.
Pa.	Titusville	May	3.. 1,200 ft. 2 1/2-inch fire hose.....	W. M. Dame, City Clk.
R. I.	Providence	2.15 p.m., May	3.. One horse-drawn hook and ladder truck .....	Jos. H. Gainer, Mayor.
Pa.	Williamsport	10 a.m., May	3.. Furnishing 1,800 ft. 2 1/2-inch hose.....	P. S. Harman, Supt. P. Safety.
Fla.	Jacksonville	May	4.. Fire department auto.....	T. W. Haney, Chief.
N. J.	Woodbury	May	4.. Motor combination chemical and hose wagon.....	Town Clerk.
Wis.	National Home	Noon, May	4.. Furnishing fire apparatus.....	R. W. Corbett, Treasurer,
Ky.	Louisville	Noon, May	4.. New engine house .....	Building Inspector.



## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Va., Suffolk		May 20..	Motor-driven combination engine and hose cart, 1,000 ft. 2½-inch hose	J. G. Williams, Fire Comr.
N. Y., Binghamton		4 p.m., May 26..	Erecting fire escapes, standpipes, siamese connections and installing automatic sprinkling systems in city school buildings	B. W. Foster, Clerk.
BRIDGES				
Wash., Tacoma		May 1..	Constructing 145-ft. frame trestle steel bridge	County Commissioners.
Pa., Pittsburgh		10 a.m., May 1..	Painting several bridges	John Scott, Co. Clk.
Ore., Portland		10 a.m., May 1..	Embankment with structures	State Bridge Commission.
O., Columbus		Noon, May 1..	Building reinforced concrete arch bridge	John Scott, Clk. Co. Comrs.
Minn., Olivia		10 a.m., May 1..	Reinforced concrete bridges	State Hwy. Comr., St. Paul.
Ill., Grand Ridge		Noon, May 1..	Concrete bridge	Robert J. McVitty, Town Clk.
Ind., Greenfield		10 a.m., May 3..	Constructing and repairing several bridges	Lawrence Wood, Co. Aud.
Ind., Bloomington		2 p.m., May 3..	Constructing five bridges	G. E. Kidd, Co. Aud.
O., Jefferson		May 3..	Bridge construction	County Commissioners.
N. Y., Lancaster		2 p.m., May 3..	Reinforced concrete arch bridge	F. H. Maute, Town Clk.
Md., Cumberland		9.30 a.m., May 3..	Reinforced concrete arch bridge	Mayor.
Colo., Alamosa		May 3..	Concrete bridge	R. Ginn, Clk. Alamosa Co. Cmr
Miss., Meridian		2 p.m., May 3..	Constructing wooden bridge	W. R. Pistole, Clk.
Minn., Breckenridge		May 3..	Constructing bridge	C. W. Williams, Town Clk.
La., Natchitoches		May 3..	Constructing steel bridge over Cane River	G. H. Pierson, Pres. Police Jury.
W. Va., Hamlin		May 3..	316-ft. span steel bridge	County Court.
N. Y., Cobleskill		May 3..	Constructing bridge over Cobleskill Creek	L. J. Gordon, Twn. Sup. Hwys.
O., Jefferson		May 3..	Bridge	V. Hillyer, Clk. Bd. Co. Comrs.
La., Sidney		May 3..	Building two small culverts	F. B. Jenkins, Co. Aud.
Pa., Media		10 a.m., May 3..	Constructing reinforced concrete bridge	J. M. Quinn, Dept. Co. Cont.
Kan., Olathe		May 4..	Building four concrete bridges	W. Moore, Clerk.
Kan., Kingman		Noon, May 4..	Removing old bridge and constructing new one	W. E. Hart, Clerk.
Mass., Northampton		May 4..	Reconstructing and repairing bridge over Connecticut River	F. A. Brooks, Chr. Com.
Ind., Salem		1.30 p.m., May 4..	Constructing bridges	I. H. Rutherford, Co. Aud.
Ind., Logansport		10 a.m., May 4..	Building two small reinforced concrete bridges	A. P. Flynn, Co. Aud.
N. J., Sea Isle		May 4..	Double lift steel bridge	F. W. Fowkes, Clk.
N. D., Washburn		2 p.m., May 4..	Culverts	E. C. Stocker, McLean, Co. Aud.
Neb., Ord		Noon, May 4..	Constructing number of bridges	W. A. Bartlett, Clk. Val'y Twp.
La., Waukon		Noon, May 4..	80-foot steel bridge, 70-foot steel bridge, road grading and culvert construction	H. O. Orr, Co. Hwy. Engr.
Ind., Winamac		May 4..	13 bridges, 6 to 50-ft. span	G. E. Paul, Co. Surveyor.
Ind., Rensselaer		2 p.m., May 4..	Constructing several bridges and making repairs	J. P. Hammond, Co. Aud.
Ind., Salem		1.30 p.m., May 4..	5 concrete bridges and 2 fills	I. H. Butterfield, Co. Aud.
Wash., Ashford		2 p.m., May 4..	Reinforced concrete bridge over Tahomac River	Mark Daniels, Monadnock Bldg., San Francisco, Cal.
W. Va., Elkins		May 4..	Constructing seven bridges	Thaddeus Pratt, Clerk.
Ind., Peru		Noon, May 5..	Constructing concrete bridge	County Auditor.
Va., Hillsville		Noon, May 5..	121-foot span bridge	G. P. Coleman, State Hwy. Comr., Richmond.
Md., Cumberland		May 5..	Bridge over Wills Creek, cost about \$10,000	J. P. Gaffney, City Engr. Council.
Wash., Puyallup		May 5..	Concrete bridge	H. M. Barber, Town Clk.
N. Y., Canton		May 5..	Constructing concrete steel arch bridge	F. M. Enos, Co. Supt. Hwys.
Ill., Kankakee		2 p.m., May 5..	Reinforced concrete bridge, cost about \$1,560	G. E. Baxter, Aud., Lafayette.
Ind., Dayton		May 5..	Building reinforced concrete or steel bridge	J. L. Hanrahan, Co. Aud.
La., Fort Dodge		2 p.m., May 5..	Building 20 bridges, cost \$27,000	E. G. Krause, Co. Clk.
O., Cleveland		10 a.m., May 5..	Bridge work	Frank K. McElheny, Miami Co. Aud., Peru.
Ind., Converse		noon, May 5..	Steel or concrete bridge	W. S. Gearhart, State Engr.
Kan., Manhattan		May 5..	11 bridges	A. E. Ostrich, Engineer.
Mo., Kohoka		May 5..	Building seven concrete bridges	Harry Kissinger, Controller.
Pa., Uniontown		Noon, May 5..	Repairing bridge No. 63	J. D. Hamman, Co. Aud.
La., Council Bluffs		2 p.m., May 5..	Building five bridges 40 to 100 ft. span (all of steel)	Fred Wesselmann, Pres. Co. Commissioners.
O., Cincinnati		Noon, May 5..	Constructing culvert on road	W. H. Aszling, Sec. Co. Comrs.
O., Dayton		10 a.m., May 7..	280-ft. span steel bridge and 216-ft. span steel bridge	W. S. Hostler, Clk. Blair Co. Comrs.
Pa., Hollidaysburg		May 7..	Eight county bridges and creosoted blk. floor	C. M. Sarain, Judge.
Ala., Jasper		May 10..	Building four steel bridges	F. H. Bogan, Clk. Mahoney Co. Comrs.
O., Youngstown		10 a.m., May 10..	Reinforced concrete bridge	A. J. Mayer, Aud.
Minn., Shakopee		2 p.m., May 11..	Constructing state bridge	A. J. Mayer, Aud.
Minn., Shakopee		11 a.m., May 11..	Two state bridges	J. C. Penrod, Clerk.
Neb., Beatrice		May 11..	Repairing old and constructing new bridges for one year	Edw. Simon, Co. Aud.
Ind., Crown Point		1 p.m., May 14..	Constructing trunnion bascule bridge	Geo. F. P. Young, Northampton Co. Controller.
Pa., Easton		11 a.m., May 14..	Reinforced concrete bridge	R. W. Anderson, Clk.
Minn., Lindstrom		1 p.m., May 17..	State bridge at Chisago Lake	Edw. Simon, Co. Aud.
Ind., Crown Point		1 p.m., May 17..	159-ft. span steel bridge	Lewis Stutt, Clk.
Neb., Nebraska City		Noon, May 20..	Bridge construction	
MISCELLANEOUS				
O., Columbus		Noon, May 3..	Constructing, maintaining & operating street railway	Al. Reinhard, Clk. Council
Minn., St. Paul		10.30 a.m., May 3..	12,000 gallons gasoline	Aug. Hohenstein, Pur. Agt.
N. Y., New York		2 p.m., May 3..	Engineers' and draftsmen's supplies	William Williams, Comr. Wtr. Supply, Gas and Electricity.
N. Y., New York		11 a.m., May 4..	15 miles wire fence with concrete posts and wood rails, also cleaning up Ashokan reservoir	W. B. Cobb, Sec. Bd. W. Sup.
Ind., Kokomo		3 p.m., May 4..	Excavation	E. B. Swift, Howard Co. Aud.
Mass., Beverly		7 p.m., May 4..	One 30-h. p. chief's car	F. B. Browning, Clk. of Committee.
N. D., Bismarck		2 p.m., May 5..	Four road graders and four traction engines	T. E. Flaherty, Co. Aud.
O., Lisbon		May 7..	Steam driven air compressor	W. E. Ferrall, Clk.
D. C., Washington		10.30 a.m., May 13..	Miscellaneous supplies for Panama Canal	General Purchasing Officer, The Panama Canal.
N. Y., Dunkirk		8 p.m., May 18..	Constructing public dock	A. D. Tooney, City Clk.

## STREETS AND ROADS

**Montgomery, Ala.**—W. S. Keller, state highway engineer, has returned from Coosa County, where he let contract for construction of state aid road from Rockford, in direction of Kelleyton. Road will cost \$4,616, one-half of which will be paid by the state.

**Fairfield, Cal.**—The Fairfield Trustees have decided to submit to electors proposition to bond city to amount of \$50,000 for street improvements. It is proposed to rock and oil all streets within city limits, except Texas St. and Union Ave., which already are paved, and street on northern boundary, only half of which is within corporate limits.

About 7 miles of thoroughfares will be improved if bond issue is approved.

**Pasadena, Cal.**—Walnut St. from Fair Oaks to Pasadena Ave. is to be paved with bitulithic pavement same as is to be laid on North Pasadena Ave. and already is laid on Walnut east of Fair Oaks.

**Sacramento, Cal.**—Contracts for con-

struction of twenty miles of state highway in counties of Yuba, Yolo and Tulare, cost \$107,074.40, have been let by State Highway Commission. Seven other strips of surveyed roadway covering 14½ miles, to cost approximately \$126,000, were declared state highway, and bids for these will be advertised.

**San Francisco, Cal.**—City engineer has completed surveys and estimates of cost of extending Portola drive, formerly Corbett road, from Stanford Heights to Twenty-fourth street. Work will cost about \$40,000 and finance committee of Board of Supervisors has made provision for that amount.

**Stockton, Cal.**—Board of Supervisors plan considerable work on county roads. West lane is to be paved with oil macadam from North St. to the Southern Pacific railroad crossing. The Brookside road is to be gravelled. Specifications have been adopted and bids have been called for May 4 for work on C. A. Howard road in island district.

**Sonoma, Cal.**—The Tuolumne County Board of Supervisors has appropriated \$1,500 towards improvement of county road known as Big Oak Flat and Yosemite Turnpike toll road. Improvement to amount of \$5,000 will be expended upon it as soon as necessary preliminary work can be attended to.

**Bridgeport, Conn.**—Action of Common Council in adopting a resolution providing that public hearings be held on proposed resurfacing of approximately nine miles of streets with bituminous macadam, indicates that paving work will be started in near future. The streets named in resolution were same as those for which paving contracts made a year ago were held up by Supreme Court injunction.

**Bridgeport, Conn.**—New contracts, to replace those enjoined last summer, for the warreniting of 11 miles of city streets will probably be authorized at meeting of Board of Aldermen.

**Wilmington, Del.**—City Council will take steps to dispose of at once the \$500,000 bond issue for street improvements. In order to rush work of street improvements, the Street and Sewer Department has already started operations in several sections of city. Total length of streets to be paved approximates 12 miles. It is the intention of the Street and Sewer Department to complete the entire project this summer if possible.

**Wilmington, Del.**—Mayor Harrison W. Howell has signed ordinance passed by Council authorizing issue of \$500,000 for street improvements. Bonds will now be offered for sale.

**Freeport, Ill.**—Project is under way to pave Globe avenue from Stephenson street to the entrance of Krape park this spring.

**Elwood, Ind.**—Plans have been completed by city council for oiling of all principal unpaved streets of city and bids from leading oil firms which are to be submitted to council will be opened and acted upon at early date.

**Fort Wayne, Ind.**—A new batch of street paving improvements have been started down their legal channel by Board of Works when engineer was directed to prepare plans and specifications for paving State St. from St. Joe River bridge to Anthony Blvd.; Rockhill St., from Jefferson to Lavina; Begue St., from Wayne to Liberty; Hoagland Ave., from DeWald to Leith; Murray St., from Barr to Calhoun; Ruth St., from Spy Run Ave. to Spy Run Creek; Jones St., from the terminus of the present pavement to Rockhill St.

**Logansport, Ind.**—A committee of citizens has raised nearly \$1,000 with which to make improvements along old Michigan Road so that route of new Dixie highway will be laid through this city.

**Peru, Ind.**—Eight thousand seven hundred dollars worth of free gravel road bonds have been sold to First National Bank by County Commissioners. Bonds were on Engleman road on Miami-Wabash county line.

**Portland, Ind.**—Pavement for four streets, comprising nineteen squares, with brick, has been ordered by the City Council.

**Clinton, Ia.**—County Auditor will advertise for bids for grading county road in Division 1, Section P, County Road System, being Charlotte-DeWitt road, and commencing at Southwest corner of the N. E. N. W. Section 34-83-4 and extending to the S. W. corner of the N. W. N. W. Section 17-82-4.

**Dubuque, Ia.**—Main St. of East Dubuque will be paved during coming summer if City Council of that city will grant petition that is being circulated at present time.

**Grinnell, Ia.**—Bids will be received up to 2 p.m., June 3, 1915, for construction of 83,350 sq. yds. paving, 64,770 lin. ft. curb and gutter, 11,300 cu. yds. grading and 29,000 lbs. castings. A. C. Harman is city clerk. The Iowa Eng'g. Co., Clinton, Ia., are Engrs.

**Wilton, Ia.**—As result of petition circulated among citizens of Wilton, majority of prominent streets of city will be oiled for summer. The most important thoroughfares which will be oiled are Walnut, Chestnut, Cedar, Maurer, Railroad, 4th, 5th and 6th Sts. Streets are now being cleaned and work of oiling will soon be begun.

**Lawrence, Kan.**—A petition is being circulated among residents near South Park, which is to be presented to City Commissioners, asking them to build curb on west side of South Park.

**Barbourville, Ky.**—Bids will be received by County Judge Thomas G. Hammons until May 7 for \$200,000 4½ per cent 30-yr. road construction bonds. Pending issuing of bonds preliminary surveys are being made of roads which will be constructed in Knox county with the funds. It is planned to start road building as early as possible, to take advantage of the weather. Interest is now centered on forthcoming bond election in Whitley Co. If issue carries in Whitley it will mean that nearly \$1,000,000 will be expended in road building in Bell, Knox, Laurel, Rockcastle and Whitley counties.

**Barbourville, Ky.**—Barbourville automobile owners, about 60 in number, are planning to raise funds by subscription for purpose of oiling streets in this city this summer. Crude oil will be obtained from old wells in Richland field, only 6 miles distant, and oiling of streets will not cost a great deal.

**Lagrange, Ky.**—The bond issue of \$100,000 for reconstruction of Oldham county roads failed of adoption at election. A majority of votes was cast in favor of issue, but necessary two-thirds was not given.

**Lebanon, Ky.**—The Bradfordsville, New Market and Danville pikes, each for distance of 4 miles out of town, will be improved with money this county will receive from State road fund, supplemented by like amount appropriated by county, if recommendation of Fiscal Court meets with approval of Road Commissioner's office. Marion county's apportionment of road fund will be about \$7,000, according to Commissioner Terrell's figures, and to meet this court appropriated \$7,000, making approximately \$14,000 available for the work.

**Owensboro, Ky.**—More than 800 land owners of Daviess County have filed petition with County Court asking election to be held on June 22, for purpose of submitting to voters of Daviess County question of whether or not county shall issue \$600,000 bonds to construct permanent roads and necessary bridges.

**Paducah, Ky.**—Commissioner of Public Works L. A. Washington is now securing prices on light grade of road oil for use on streets and as soon as possible property owners will be advised cost of oil. It is planned to buy good oil at a low cost, letting property owners and residents stand expense of buying oil and city furnishing labor for spreading oil on streets.

**Wickliffe, Ky.**—In response to Ballard Fiscal Court's advertisement for bids on \$300,000 bond issue for gravel roads, voted in February, there were six bids from bond brokers in New York, Chicago, Cincinnati, Toledo and Kansas City. All bids were rejected by court, which will make another attempt to sell in near future.

**Winchester, Ky.**—Mayor Matlack and number of the Councilmen are busily engaged in preparing data and plans for street paving work which they expect to start within short time.

**Sag Harbor, L. I.**—Main St. and principal avenues leading into town will be scarified this week, repaired with Peekskill gravel and rolled smooth. Taxpayers have appropriated \$2,500 for work and Superintendent Frank Downs of Southampton town will supervise the job.

**Bangor, Me.**—An issue of \$500,000 4 per cent serial highway bonds, dated Apr. 1, 1915, has been sold by state of Maine to N. W. Harris & Co. at 100.678.

**Caribou, Me.**—State highway commission agrees to expend sum of \$25,000, providing towns of Caribou and Presque Isle will vote \$4,000 each, making total of \$33,000, on road leading from one vil-

lage to other, a distance of 12 miles. This road, on main highway from Augusta to Van Buren, will become regular macadamized road, of standard width, concrete culverts, etc., providing proposition is accepted by two towns.

**Beverly, Mass.**—Order providing for appropriation of \$38,000 for smooth paving of Rantoul St. has been passed to its final stage.

**Beverly, Mass.**—Alderman Goldthwait has introduced order requesting Mayor to submit supplementary budget of \$4,500 for a motor truck for distribution of oil on city streets.

**Beverly, Mass.**—There were six bidders for furnishing street oils opened by committee on public service and aid. The bids were as follows: Barber Asphalt Paving Co. of Philadelphia, Bermuda road asphalt, 12 6-10 cts. gal.; Trinidad asphalt, A 6 3-10 cts. cold; hot 7 3-10 cts. gal. Barrett Mfg. Co., Boston, Tarvia B 6 cts. gal.; put on hot with sprayer, 8¼ cts. gal.; Tarvia X 9¼ cts. gal. United States Asphalt Co., N. Y., liquid asphalt in tank cars, 4 8-10 cts. gal.; road binder, 7 cts. gal.; reinforced asphalt, 8 cts. gal.; road binder, put on hot, 13 cts. gal.; Supreme road oil, 9 5-10 cts. gal. Alden Spear, Cambridge, heavy Tassol, in not less than 3,000-gal. lots 6 cts. gal.; medium dust laying asphalt oil, 5 cts. gal. John Baker Co., Boston, No. 96, road asphalt in car load lots, .6737. Gulf Refining Co., Beverly, asphalt oil C, 3 cts. gal.; B, 3¼ cts. gal.; A, 3½ cts. gal. Standard Oil Co., N. Y., asphalt road oil No. 4, 3 1-3 cts. gal.; put on hot with spraying machine, 4 5-10 cts.; No. 6, cold 3 4-10 cts. gal., hot 4 6-10 cts. gal. Asphalt Binder Co., 4 3-4 cts. gal., cold; hot, 8 cts.; B cold, 7 cts. gal.; hot, 12 cts. gal.; "Socony" road oil, 4½ cts. and 5 cts. gal. The board took the bids under advisement.

**Boston, Mass.**—The Western Massachusetts highway bill, providing for appropriation of \$2,500,000 for construction by state of certain highways in five western counties has been passed by house without objection. The bill will be sent over to Senate for action.

**Fall River, Mass.**—Aldermanic committee on highways has made start in matter of apportioning paving work for year, and while contract for paving has not yet been given out, a Boston firm who did all of the paving last year will handle the first batch. Paving orders recommended include Bank St. from westerly line of North 8th to the easterly line of Linden, hassam block paving, \$1,950; Division St., Eagle to Broadway, hassam block, \$3,250; Alden St. from present terminus easterly, hassam block, \$4,450; Bank, Oak to North 7th, narrow block, \$2,525; Linden, northerly line of Bank, wooden blocks, \$2,070; William, Fountain to Eagle, \$1,625.

**Gloucester, Mass.**—Municipal Council, acting as committee on finance opened bids for highway improvement loan of \$30,000 and has awarded loan to George A. Fernald & Co., of Boston, they being the highest bidders.

**Haverhill, Mass.**—City Council has passed bond order for macadam work and \$26,000 for block paving.

**Lynn, Mass.**—At meeting of Water and Sewage Commissioners bids were opened for construction of new 3½ by 3-ft. cement culvert from junction of Banks and Farragut Rds. through Banks Rd. and Paradise Rd. to Burrill St., and thence across lots to Pine St. Contract for work was not awarded, as Commissioners wish to further consider the bids. The bids were: P. J. McDermott of Lynn, \$9,287.50; the M. McDonough Co., of Swampscott, \$14,266; T. A. Moynahan of Boston, \$15,276.20; D. J. Sheehan of Lynn, \$15,298.50; A. G. Tomassello of Boston, \$15,503.50; Mayo Construction Co. of Lynn, \$16,641.10; Felix D'Angese of Swampscott, \$17,202.50; Boston Construction Co. of Boston, \$17,995.

**Taunton, Mass.**—Appropriation of \$25,000 for permanent highway construction will be recommended by committee on streets and bridges to City Council and order to this effect creating city loan will be presented at next meeting.

**Waltham, Mass.**—Bids have been opened at Mayor's office for city supply of oil for street sprinkling purposes, and awards for both grades specified in call for bids were made to the Standard Oil Co. Estimated supply of the Grade A oil is 62,900 gals., and of the grade B, 46,215 gals. Estimates submitted by concerns were as follows, prices quoted being per gallon: Dustoline Roads Co., A 7.25c., B 1.650c., B 2, 5.60c.; The Sun Co., A 4.03c., B 4.18c.; Standard Oil Co., A 4.50c., B 3.33c.; John Baker, Jr., B 3.75c.; Boston Engineers'



Supply Co., A 5.5c.; Barber Asphalt Paving Co., A 6.3c.; The Island Petroleum Co., A 6.50c., B 6.50c.; The Indian Refining Co., B 5.38c.

**Dowagiac, Mich.**—Sixteen miles of State reward road have been ordered by Commissioners.

**Chillicothe, Mo.**—A rock road across Missouri from St. Joseph through Chillicothe to Hannibal is plan of Col. Frank W. Buffum, state highway engineer.

**Maryville, Mo.**—The \$1,575 Studebaker uniform pressure flusher, purchased subject to approval some time ago by City Council, and later returned, will be repurchased at same price and terms by Aldermen at next regular meeting of Council, May 7.

**St. Louis, Mo.**—City is considering various street improvements.

**St. Louis, Mo.**—Ordinances have been passed for improvement of various streets.

**Billings, Mont.**—First step has been taken by City Council in improvement project to cost between \$50,000 and \$80,000 and to provide paving for sections of six avenues and streets in western portion of city. The proposed action will mean paving of Division St. from alley between Clark and Lewis Aves. to point midway between Yellowstone and Clark Aves.; paving of Clark Ave. from Division St. to midway between 3d and 4th Sts. west; the paving of Yellowstone Ave. from 1st St. west to the middle of the block between 3d and 4th Sts. W., and the paving of 1st, 2d and 3d Sts. W. from the alley between Clark and Lewis Aves. to alley between Yellowstone and Wyoming Aves. Five varieties of paving materials are proposed in provisional resolution. Total estimated cost for paving of entire district with wood block paving is \$80,151.75, or \$281.75 per lot; standard bitulithic, total cost, \$60,472.13, per lot, \$212.75; gravel bitulithic, total cost, \$53,526.33, per lot, \$188.25; Portland cement concrete, one course, total cost, \$50,053.50, per lot, \$176; Portland cement concrete, two courses, total cost, \$52,053.50, per lot, \$184.25.

**Glendive, Mont.**—Arrangements for good roads building campaign have been completed by Board of Commissioners, and by end of ensuing autumn it is expected that at least 150 miles of excellent highway will have been constructed. This is made possible by reason of fact that board has just purchased \$7,500 worth of modern road machinery, including a monster engine of the "caterpillar" variety, two regulation graders and an elevator grader.

**Kearney, Neb.**—One mile of seedling concrete road will be constructed on Lincoln highway west of Kearney within next few months.

**Kearney, Neb.**—Council has passed ordinance which calls for paving of Central Ave. from 18th St. to Lincoln St., 7 blocks.

**Bridgeton, N. J.**—Purchase of street sprinkler is being discussed.

**Camden, N. J.**—Following bids have been received for belgium block paving: A. Ward & Son, 8th and Division Sts., \$2.97 per sq. yd.; W. P. Corson, 506 Hadden Ave., \$2.95 and \$2.75 per sq. yd.

**Linden, N. J.**—Resolution has been introduced authorizing engineer to prepare plans for improvement of 5,556 ft. of roadway.

**Newark, N. J.**—A pavement of Belgian block on Main street, from Orange line to Valley road, and along Valley road to Washington street, is provided for in ordinance passed on first reading by West Orange Town Council. Expense, it is believed, will be about \$30,000.

**Perth Amboy, N. J.**—Board of Harbor Commissioners has decided that it would be better to make boulevard along southern shore in reclaiming Raritan St., rather than ordinary highway, and agreed to take steps to have Raritan St. ultimately widened to 100 or more feet instead of seventy.

**Princeton, N. J.**—It is now definitely decided that Nassau Street road bed will be paved in near future. Project has not been advertised for bids as yet, but town authorities hope that all of preliminary details will be completed and actual work commenced by August.

**South Amboy, N. J.**—Council has been petitioned to pave Main street from Broadway to Feltus street.

**Trenton, N. J.**—During next three months city street department will pave about three miles of city streets. Almost an equal mileage of new streets will be laid.

**Westfield, N. J.**—Ordinance to improve Edgewood Parkway and to macadamize Maple street has been passed on second and third readings.

**Albany, N. Y.**—S. Pearl St. will be repaved this summer.

**Albany, N. Y.**—Central Ave. will be repaved with rock-bound asphalt from curb to within 18 ins. of car tracks. Space between tracks and 18 ins. on either side of them will be paved with granite blocks.

**Albion, N. Y.**—At special meeting of Orleans County Board of Supervisors resolutions were adopted providing for improvement on two county highways at total expenditure of \$144,200. Both roads—the Yates Center Rd., in northwestern part of county, and Fancher-Holley Highway, in town of Murray, running north from Fancher Station—were originally put on State highway map for improvement after Orleans County Supervisors adopted resolution of March 30, 1906, approving of plans of improvements at cost of \$35,400, of which Yates Center Highway work would cost \$26,400 and Fancher-Holley Rd. improvement \$9,000.

**Binghamton, N. Y.**—Alderman Dibble is expected to introduce at regular meeting of Common Council ordinance calling bonding election to determine whether \$23,000 shall be raised for park improvement purposes this year.

**Brooklyn, N. Y.**—Preliminary authorization for public improvements to be paid for by assessments were given to extent of \$4,903,300 by Board of Estimate and Apportionment between Jan. 1 and Apr. 7. Of this amount \$1,171,000 was for Brooklyn and \$1,585,000 for Queens. The total of final authorizations for same period was \$2,676,100, of which \$1,467,000 was for Brooklyn and \$432,400 for Queens. Following is list of final authorizations: Brooklyn—Regulating and grading Newport St. from Snediker Ave. to Alabama Ave. Estimated cost, \$3,200. Regulating and grading Saratoga Ave. from Livonia Ave. to East 98th St. Estimated cost, \$5,700. Paving with asphalt following streets and highways, the contract time and estimated cost named as below: Webster Ave. from Gravesend Ave. to 47th St., \$2,600; 21st St. from 60th St. to 64th St., \$9,000; 12th Ave. from 36th St. to 38th St., \$3,100; Belmont Ave. from Van Sinderin to Snediker and from Alabama to Pennsylvania, \$5,000; President St. from Nostrand Ave. to Rogers, \$4,300; Lincoln Pl. from Underhill Ave. to Washington, \$6,400; Louisa St. from Chester Ave. to 36th St., \$2,600; Argyle Road from Church Ave. to Caton Ave., \$3,700. The following sewer undertakings: Ave. H from East 35th St. to Brooklyn Ave., \$1,900; East 31st and East 35th Sts. from Farragut Rd. to property of Flatbush Waterworks Co., \$1,500; superstructure for sewage pumping station on southerly side of Ave. V between West 10th and West 11th Sts., \$55,000. Queens, all in Long Island City—Grading Van Dam St. from Thomson Ave. to the summit about 225 ft. southwest of Star Ave., \$37,700; paving with asphalt, block North Henry St. from Astoria Ave. to Newtown Ave., \$4,600; curbing, flagging and paving with asphalt block South Washington Pl. from Academy St. to Jackson Ave., \$5,400; paving with granite block Sunswick St. from Wilbur Ave. to Paynter, \$6,800; paving with asphalt 11th Ave. from Grand Ave. to Newtown Rd., \$4,000.

**Cattaraugus, N. Y.**—Village has voted in favor of issuing paving bonds in sum of \$19,500.

**Cooperstown, N. Y.**—Town board of town of Otsego has voted to construct concrete bridge over creek just south of Five Mile Point on western shore of lake. Bridge will be constructed at time new state highway from Three Mile Point to Springfield is being built.

**Glens Falls, N. Y.**—Village trustees of South Glens Falls have called special election for May 4 for purpose of voting upon proposition to bond village for \$39,000 to pave Saratoga Ave. and Main St. with state aid. It is proposed to pay the bonds annually in installments of \$3,000 each. First installment will be paid one year from date of bond issue.

**Goshen, N. Y.**—Tank of 8,000 gallons of Aztec road oil has been ordered purchased.

**Oswego, N. Y.**—City will receive bids on May 1 for 5,350 yds. new brick pavement and 1,700 yds. resurfacing old asphalt pavement with brick. J. F. Flanigan is City Engr.

**Philmont, N. Y.**—Philmont has decided to raise \$7,000 for purposes of street improvements in connection with what is to be done in that village by

state. Bonds will be issued to pay cost of construction village will stand for.

**Potsdam, N. Y.**—Town Board of Potsdam has designated two miles of road north from Hopkinton state road for improvement coming summer. Stretch leads to West Stockholm. If there is time for more road work after this strip is finished section in the vicinity of Slab City, west of village, will be improved.

**Rochester, N. Y.**—Public Works Committee of Common Council is considering proposed ordinances for improvement of streets of Linden and Woodlawn. The committee will report on ordinance for bitulithic pavement in Woodlawn street, at the next meeting of Common Council. The estimated cost is \$7,700. The committee will also report favorably on ordinances for the pavement of Linden street with asphalt, 24 feet wide, at an estimated cost of \$17,000. Separate ordinances cover pavement between Oakland and Meigs streets and between Meigs and South Goodman streets.

**Rochester, N. Y.**—Board of Contract and Supply Clerk Pifer has been instructed to advertise for bids for oiling roads in Rochester Park system. Estimated amount of roadway to be oiled is 134,000 sq. yds.

**Rochester, N. Y.**—Bids for three kinds of pavement for East Boulevard have been opened by Good Roads committee of Board of Supervisors and report will be made to Board on May 1, or at a special meeting, if one be called before that date. Types of pavement, bidders and bids were: Bitulithic—Whitmore, Rauber & Vicinus, \$51,795.50; Warren Bros. Co., \$56,164.50; Schroeder-Hicks Cons. Co., \$55,879.50. Amiesite pavement—Bison City Eng. & Con. Co., \$36,399.50; A. J. Rockwood, \$33,442. California Asphalt—Whitmore, Rauber & Vicinus, \$35,558; Ribstein-Holter Co., \$37,932; Bishop Construction Co., \$40,966; Julius Frederichs Co., \$40,510.50.

**Schenectady, N. Y.**—Final resolution approving plans and specifications and raising money for improvement of first section of Sacandaga road, in town of Glenville, has been unanimously adopted by Board of Supervisors. Road is to be 16 ft. wide, of water bound macadam. It will start at Toll St., at Scotia village line and run northwesterly to Glenville Center Church, distance of 4.22 miles, all in town of Glenville. Cost will be \$48,200, of which county of Schenectady will pay \$16,870.

**St. Johnsville, N. Y.**—A special village election will be held May 6, from 1 to 5 p. m., on question of legalizing bond issue to amount of \$10,000 for purpose of supplying funds for paving of Bridge street.

**Syracuse, N. Y.**—Board will receive bids for sprinkling macadam paved streets with oil.

**Utica, N. Y.**—Bids for paving Carlisle avenue from Genesee street to West Shore Railroad and Hubbell street from Bleecker to Broad streets and resurfacing Mary street from John street to Third avenue and Saratoga street from Columbia to Court streets have been received by Board of Contract and Supply. The proposals were from Harry W. Roberts & Co., of this city, and John W. Davitt, of Troy. The prices bid follow: Carlisle avenue—Harry W. Roberts & Co., sheet asphalt, \$1.96; bitulithic, \$2.24; asphaltic concrete, \$1.86, and vitrified brick, \$2.30; John W. Davitt, sheet asphalt, \$2.01, and asphaltic concrete, \$1.95. Hubbell Street—Harry W. Roberts & Co., sheet asphalt, \$1.93; bitulithic, \$2.21; asphaltic concrete, \$1.83, and vitrified brick, \$2.30; John W. Davitt, sheet asphalt, \$2.05, and asphaltic concrete, \$1.95. Mary Street (resurfacing)—Harry W. Roberts & Co., sheet asphalt, \$1.19; asphaltic concrete, \$1.10, and bitulithic, \$1.43; John W. Davitt, sheet asphalt, \$1.23 and asphaltic concrete, \$1.15. Saratoga Street (resurfacing)—Harry W. Roberts & Co., sheet asphalt, \$1.20; asphaltic concrete, \$1.10, and bitulithic, \$1.44; John W. Davitt, sheet asphalt, \$1.25, and asphaltic concrete, \$1.16. All bids were referred to City Engineer Kemper for canvass. In submitting bids, Harry W. Roberts & Co. designated genuine Trinidad asphalt, while Mexican asphalt was proposed material proposed by John W. Davitt, of Troy.

**Utica, N. Y.**—City Engineer Joseph Kemper's canvass of bids for paving Carlisle Ave. and Hubbell St. and resurfacing Mary and Saratoga Sts. have been received at regular meeting of Board of Contract and Supply in Common Council chambers. Total prices on various streets follow: Carlisle Ave.,

Harry W. Roberts & Co., sheet asphalt, natural curb, \$6,075.40; artificial curb, \$5,760.40; bitulithic, natural curb, \$6,604.60; artificial curb, \$6,279.60; asphaltic concrete, natural curb, \$5,886.40; artificial curb, \$5,561.40; vitrified brick, natural curb, \$6,718; artificial curb, \$6,393. John W. Davitt, sheet asphalt, natural curb, \$6,582.10; artificial curb, \$6,062.10; asphalt concrete, natural curb, \$6,468.70; artificial curb, \$5,948.70. Hubbell St.—Harry W. Roberts & Co., sheet asphalt, natural curb, \$7,037.30; artificial curb, \$6,644.80; bitulithic, natural curb, \$7,712.10; artificial curb, \$7,319.60; asphaltic concrete, natural curb, \$6,796.30; artificial curb, \$6,403.80; vitrified brick, natural curb, \$7,929; artificial curb, \$7,536.50. John W. Davitt, sheet asphalt, natural curb, \$7,798.90; artificial curb, \$7,170.90; asphaltic concrete, natural curb, \$7,557.90; artificial curb, \$6,929.90. Mary St. (resurfacing and natural curb)—Harry W. Roberts & Co., sheet asphalt, \$8,887.10; bitulithic, \$10,060.70; asphaltic concrete, \$8,447. John W. Davitt, sheet asphalt, \$9,271.70; asphaltic concrete, \$8,880.50. Saratoga St. (resurfacing and natural curb)—Harry W. Roberts & Co., sheet asphalt, \$4,483; bitulithic, \$5,065; asphaltic concrete, \$4,240.50. John W. Davitt, sheet asphalt, \$4,734.25; asphaltic concrete, \$4,516.

**Watertown, N. Y.**—Approval has been received from state highway commission to plan for widening Main street in Cape Vincent and in substitution of concrete road for water bound macadam as first proposed. Road is about a mile in length and will be laid this summer. The original plans called for a 16-foot surface, but now this will be widened to 24 and 32 feet, giving a finer appearance to the street. The Lorraine-Worth contract of five and one-half miles will soon get under way. The Philadelphia-Antwerp stretch of 7.23 miles of concrete and brick pavement will be included in the letting of May 5.

**Elkin, N. C.**—On May 12 Elkin Township will hold election and vote on issuing of \$35,000 in bonds for purpose of improving and maintaining public roads in township.

**Matthews, N. C.**—Board of Trustees of Matthews township road district offers for sale \$50,000 coupon bonds issue for purpose of improving public roads of that part of Chatham county embraced within boundaries of said district.

**Mt. Airy, N. C.**—Election is to be held in Elkin township May 12 to decide upon issuance of bonds, amounting to \$35,000 for improvement of roads.

**Roxboro, N. C.**—Special election will be held May 11 to vote on question of issuing road improvement bonds in sum of \$75,000.

**Statesville, N. C.**—Board of county commissioners of Iredell County has sold to Baker, Watts & Co., bankers, of Baltimore, the \$80,000 county bond at a premium or \$1,248. There were eight or ten other bids on bonds, but Baltimore firm, offering highest bid, received the bond. Money is being used for bridge work and road construction in Iredell.

**Adams, O.**—Township has voted bonds for construction of pike purposes.

**Canton, O.**—County commissioners have received from state highway department specifications for improvement of part of Canton-Akron road north of New Berlin, bids for which are to be received at Columbus, on April 30. State estimates cost of road work at \$30,695.55 and cost of culverts and bridges on road at \$20,836.80.

**Coshocton, O.**—Petitions have been prepared for circulation among property owners who lands about on alleys between Main and Chestnut and 5th and 6th Sts., asking for city to pave the alleys.

**Dayton, O.**—City Commission has decided to readvertise for oiling of streets this summer.

**Massillon, O.**—Purchase of two flushing machines is being considered.

**Massillon, O.**—Council, as committee of the whole, has ordered drawn up ordinance to issue bonds to pay city's share of cost of all improvement work contemplated for next summer. The ordinance will cover such improvements as paving, construction of sewers, sidewalks, curb and gutters.

**Middletown, O.**—Resolution has been adopted declaring it necessary to improve Queen Ave. from Crawford St. to first alley east of Cleveland St. and Iglehart Ave. from 3d St. to 2d St. by constructing combined cement curbs and gutters, resetting stone curbs, and by paving the roadway thereof with asphaltic concrete, bituminous macadam, vitrified brick, one course concrete as may be later determined on by City Commission after bids are received.

**Navarre, O.**—Road improvement bonds in sum of \$6,000 will be sold at 12, June 1, for improving Navarre and Justus Rd. from Corporation line to Sugar Creek Township line.

**Newark, O.**—Resolution has been adopted, declaring it necessary to improve Chestnut St. from No. 4th St. to No. 5th St. by constructing a sanitary and drainage sewer therein.

**Newark, O.**—Resolution has been adopted declaring it necessary to improve Buena Vista St. from Indiana St. to the north line of Mechanic St. by paving and curbing the roadway thereof.

**Piqua, O.**—Resolutions have been passed for street and sewer construction to cost about \$50,000.

**Salem, O.**—County Commissioners have announced their intention of spending \$350,000 on good roads in county. This money is to be spent with understanding that township boards will share expense. Already Middleton township has arranged for expenditure of \$40,000 and Liverpool township board is to spend \$30,000. On May 1, next Unity township will vote to issue bonds in sum of \$40,000 for improved roads, and Elk Run township board has filed a petition with deputy state board of supervisors of election, to vote on bond issue in amount of \$30,000 for like purpose.

**Urbana, O.**—Property owners have expressed themselves in favor of street asphalt for Scioto St.

**Youngstown, O.**—The proposed ordinance to issue entire amount of \$800,000 worth of municipal bonds to pay city's portion of cost of eliminating grade crossings has been passed by council unanimously, following favorable recommendation by finance committee.

**Tulsa, Okla.**—Bids for \$200,000 bond issue will be voted on May 4.

**Portland, Ore.**—Voters of Multnomah county have decreed by their ballots at special election that bond issue of \$125,000 be made for purpose of hard-surfacing the roads of county.

**Portland, Ore.**—By May 24 it is expected work will start on about six main turnk roads in Multnomah County. Approximately between 2,000 and 3,000 men will be employed. So extensive is hard surface paving campaign, a matter of 70 miles, that probably every paving plant in Portland will be engaged on the enterprise.

**Carlisle, Pa.**—Ordinances have been passed providing for paving of various streets with vitrified brick and concrete.

**Connellsville, Pa.**—Following bids have been received for 500,000 paving block, per 1,000: Globe Co., \$20.95; Thornton Brick Co., \$21.50; Penna. Clay Co., \$19.40; American Sewer Pipe Co., \$20.94; United Fire Brick Co., Dunbar, \$16.95; Fairchance, \$18.95; Layton Fire Brick Co., \$17.40; Soisson Fire Brick Co., \$17.

**Erie, Pa.**—Bond issue of \$25,000 for public improvements is being discussed.

**Pittsburgh, Pa.**—At mass meeting of residents of West End and surrounding boroughs, a resolution was adopted favoring 80-ft. street from Point Bridge to Steuben St. This would mean widening of W. Carson St. between those points.

**Williamsport, Pa.**—Question of purchasing new motor-driven combination street flusher and sprinkler is being discussed.

**Williamsport, Pa.**—Oiling of dirt streets has been ordered.

**Newport, R. I.**—City Engineer Easton is surveying Broadway for new pavement.

**Woonsocket, R. I.**—Mayor Snyder has under consideration 12 resolutions, which have been passed by both branches of City Council and which provide for appropriation of total of \$119,400 for street paving, curbing, macadamizing and drains, and for sewer construction.

**Greenville, S. C.**—Citizens of Greenville city have voted to issue \$100,000 in bonds for street improvement; \$25,000 for sewer extension and \$45,000 to purchase and enlarge present city hospital.

**Greenville, S. C.**—There will be spent upon streets of city in near future more than a quarter million dollars, bond issue voted upon having carried by substantial margin. County Commissioners are making arrangements for expenditure of a million dollars upon roads of county. This sum will be expended in construction of system of trunk lines over county with this city as center of the radius.

**Chattanooga, Tenn.**—Finance committee of Hamilton county court has sold \$25,000 road bond issue for East Chattanooga driveway to R. M. Grant & Co., at \$103.41, equivalent to premium of \$852.50.

**Jackson, Tenn.**—Bids will be received May 4 for paving as follows: Vitrified brick on 5-in. concrete base; creosoted wood block on 5-in. concrete base; bitulithic on 5-in. concrete base; bitulithic on macadam base; sheet asphalt on 5-in. concrete base; asphalt concrete on 5-in. concrete base. Amount of square yards is about 35,000. C. E. Griffin is Mayor and W. F. Alexander is City Clerk.

**Johnson City, Tenn.**—Election commissioners of county have issued notice that bond election that was to have been held on Saturday, May 15, for purpose of voting \$425,000 bonds for roads in this county has been postponed until Dec. 18, 1915.

**Madisonville, Tenn.**—Citizens of Monroe county will vote on issuance of \$300,000 road bonds for building and improving pike roads in that county July 15.

**Denison, Tex.**—Bond issue of \$900,000 for good roads has been carried.

**Greenville, Tex.**—Consulting Engineer Julian C. Field has stated that work on \$400,000 highway proposition in and around Greenville would begin at once. The bonds for appropriation were approved by Attorney-General Looney.

**Houston, Tex.**—Asphaltic concrete will be material that will be laid on Main St. boulevard and Eureka Paving Co., with headquarters in Houston, will do work at cost of not more than \$150,000, which is considerably less than estimates of City and County Engineers.

**Longview, Tex.**—B. K. Caldwell of Shreveport, La., and E. W. Davis of this place have been appointed civil engineers to superintend county road work soon to be started here, in which about 100 miles of hard surface road will be built. Bonds have already been sold and work will begin as soon as contract can be awarded.

**McKinney, Tex.**—The Commissioners' Court has advertised for cash bids on road improvement bonds of three Collin county districts to amount of \$665,000. They include \$375,000 in the McKinney district, \$200,000 in the Farmersville district and \$90,000 in the Princeton district.

**Sherman, Tex.**—With six small boxes to hear from, the good roads bond issue of \$900,000 carried in Grayson County by majority of 789 votes. According to plans of campaign committee, 225 miles of gravel roads are to be built, and every town in county will be on good road.

**Yonkum, Tex.**—The \$50,000 road bond issue in Road District No. 2 of De Witt County has been carried.

**Salt Lake City, Utah.**—By unanimous vote City Commission has decided to construct bitulithic pavement on B. St.

**Seattle, Wash.**—Plans have been received from engineer for paving of Fifth avenue, estimated cost, \$26,000.

**Janessville, Wis.**—Petition has been received for improvement of North Vista Ave.

**Sheboygan, Wis.**—Highway committee of County Board are considering matters pertaining to building of roads and bridges in county this season and information was brought out that various towns at recent election had voted for road improvements to extent of \$63,900 independent of bridge in town of Holland.

**Superior, Wis.**—Bonds for construction of highways are being discussed.

#### CONTRACTS AWARDED.

**Stockton, Cal.**—For building gutter in new city park site west of Yosemite Terrace to A. B. Munson at 47 cts. per lin. ft., or \$1,837.80.

**Hartford, Conn.**—Following contracts have been awarded by State Highway Commissioner Charles J. Bennett: Towns of Middletown, Haddam, New Britain, Bristol, Colton, Southbury and Danbury inclusive, wood guard railing, to Webster & Webster, East Hartford, Conn., for approximately \$2,326.80. Town of Old Lyme, a section of native stone macadam on the Neck Rd., 8,690 ft. in length, to John Arborio, 172 Congress Ave., New Haven, for approximately \$13,345.20. Town of Wethersfield, a section of bituminous macadam on the Hartford-Saybrook Rd. in the town of Wethersfield, 1,013 ft. in length, to Leonardo Suzlo, Meriden, Conn., for approximately \$7,594.60. Town of Rocky Hill, a section of concrete on the Hartford-Saybrook Rd., 1,225 ft. in length, for approximately \$9,712.50, to the A. C. Sternberg, Jr., Construction Co., West Hartford, Conn.

**Mystic, Conn.**—Contract for sidewalks on east side of river has been awarded. The successful bidder was F. D. Williams of Norwich, who was one of three



low bidders, bids of whom were practically the same. Price to be paid is 14 cts. per sq. ft., earth excavation exceeding 2 ft., 50 cts. per cu. yd., and rock excavation exceeding  $\frac{1}{2}$  cu. yd., \$2.50 per cu. yd.

**Brazil, Ind.**—Bids for construction of E. Church St. sidewalks have been received and contract let to Jones & Underwood for 9 $\frac{1}{2}$  c. per sq. ft., which is 43 $\frac{3}{4}$  c. per lin. ft. The other bids are: R. M. Campbell, 44c. per lin. ft.; J. D. Moore, 9c. per sq. ft.

**Indianapolis, Ind.**—Board of County Commissioners has awarded to William Coin, for \$15,543, contract to build concrete road from Bethel Ave. to Perry Twp. line. Road is now known as 17th Ave. and is situated in Center Twp. It is about a mile in length. Coin was low bidder.

**Kokomo, Ind.**—By Board of Works for improvement of Sycamore, Home and Market Sts., to Kokoma Construction Co. at following bids: Home St., \$5,500; Sycamore, \$7,460, and Market St., \$14,500.

**Muncie, Ind.**—Contract for oil to be used by city during coming summer in oiling streets has been let to Indiana Refining Company by a special committee of council. The bid was three cents per gallon. Six companies submitted bids.

**Muncie, Ind.**—Members of special committee of Council has let contracts for four improvements, and ordered clerk to advertise for bids for four more. Improvements sold and successful bidders follow: A cement alley between Charles and Howard Sts. from Gharkey to Mound, William M. Birch, \$1.49 per lin. ft. A macadam roadway and cement curb and gutter in 5th St. from Jefferson to Elm, Louis Peck, \$700. A general sewer in Lincoln St., William M. Birch, \$1,061.42. A cement sidewalk on both sides of Vine St. from Willard St. to 9th St., William M. Birch and E. M. Curtis, each bid 47 cts. per lin. ft.

**Boone, Ia.**—For paving 43 blocks with asphaltic concrete, approximately 49,000 sq. yds., to Des Moines Asphalt Paving Co., of Des Moines, at \$1.47 $\frac{1}{2}$  per sq. yd. Otto Hile is city clerk.

**Council Bluffs, Ia.**—Contract for street flusher has been awarded to Economy Flusher Co., of Council Bluffs, at \$850.

**Hutchinson, Kan.**—Contract has been awarded by City Commission for curbing and guttering of 17th Ave. east, from Main to Poplar St. to McLeod & Crandall, the lowest bidder, at 52 cts. for curb and gutter and 23 cts. for curb alone. Other bidders were: J. H. Shears, whose bid was but \$6.10 higher on the entire job, and Griffith & Brown, who bid 71 cts. per ft. for the combination work. The contract for curbing on 7th Ave. east was let to J. H. Shears, whose bid was 27 $\frac{1}{2}$  cts. Other bids: McLeod & Crandall, 28 $\frac{1}{4}$  cts. and Griffin & Brown, 30 cts.

**Neodesha, Kan.**—For construction of 14,678.7 sq. yds. brick pavement on rock foundation and 5,865.5 cu. yds. earth excavation, to A. W. Van Hoffer, Jonlin, Mo., at \$1.47 per sq. yd., or total bid of \$28,027.62. J. J. Carroll is City Clerk.

**Salina, Kan.**—Bids have been awarded to Watts and Emerman for following paving: 30,000 sq. yds. of 3-inch fiber brick paving on 5-inch concrete base at \$1.69 per sq. yd.; 3,000 sq. yds. of asphaltic concrete 2 inches thick on 5-inch concrete base at \$1.30 per sq. yd.; 20,000 lin. ft. of cement curb and gutter at 52c. per lin. ft.; excavating and grading at 33c. per cu. yd. P. G. Wakenhut, city engineer.

**Winchester, Ky.**—The Clark County Construction Co. has been awarded contract for macadamizing Hughes St. in Southside Heights Addition.

**New Bedford, Mass.**—Contract for curbing has been awarded to John B. Sullivan & Son and the New Bedford & Dartmouth Granite Co., at 53c. a foot.

**Lowell, Mass.**—Contract for edgestones and circle stones has been awarded to H. E. Fletcher. The bids were as follows: H. E. Fletcher, 32 $\frac{1}{2}$  on edgestones and 43 $\frac{1}{2}$  on circle stones. J. Marinel, 33 and 48 cents. and Louis Palmer & Son, 35 and 47 cents.

**Crystal Falls, Mich.**—At meeting of the board of county road commissioners held April 15, 1915, at their office in court house, Crystal Falls, Mich., following five roads contracts were let: Mansfield Sagola Rd., Contract No. 25, for 3 $\frac{1}{2}$  miles of top course macadam, was awarded to Smith, Byers & Sparks Co., Houghton, Mich., for \$2.06 per cu. yd. Crystal Falls Amasa Rd., Contract No. 29, for grading 2.8 miles, was awarded to D. F. Boyle & Co., Crystal Falls, Mich., earth excavation, 34c. per cu. yd.; loose rock excavation, 60c. per cu. yd.;

solid rock excavation, \$1.25 per cu. yd.; grubbing, 50c. per sq. yd.; clearing, \$45 per acre. Mansfield Sagola Rd., Contract No. 26, for grading 2 miles of road, was awarded to O. T. Olson and Frank Johnson, Crystal Falls, Mich., clearing, \$20 per acre; grubbing, 38c. per sq. yd.; earth excavation, 25c. per cu. yd.; loose rock excavation, 30c. per cu. yd.; solid rock excavation, 50c. per cu. yd. Alpha Mastodon Rd., Contract No. 28, grading 3 miles of road, was awarded to J. E. Blomgren, Norway, Mich., clearing, \$40 per acre; grubbing, 30c. per sq. yd.; earth excavation, 27c. per cu. yd.; loose rock excavation, 50c. per cu. yd.; solid rock excavation, \$1.75 per cu. yd. Crystal Falls Alpha Rd., Contract No. 27, top course macadam for 2 miles of road, was awarded to Herman Holmes, Crystal Falls, Mich., for \$2.25 per cu. yd. A. L. Burridge is county road engineer.

**Duluth, Minn.**—Contracts for paving of Fifth alley, from Fourteenth to Fifteenth avenues, east, have been awarded to August Bodin on his bid of \$1,336.30 and for gas and water main extensions in Howell street, from Lakeview drive to Vermilion, to A. Hedenberg on his bid of \$509.50.

**St. Paul, Minn.**—County commissioners have awarded contract for grading, clay and gravel work on Lake Owasso Boulevard, Fairchild Ave. and Victoria St., to Pother & Collopy for \$7,228. Dolphis Arcand was awarded contract for grading and graveling lower Birch Lake Rd. for \$4,265.

**Anaconda, Mont.**—Contract for laying concrete sidewalks was awarded T. C. Calnan at 18 cts. per sq. ft.

**Buttville, N. J.**—Contract for constructing Great Meadows-Buttville Rd. to Smith Bros., Hackettstown.

**Clifton, N. J.**—The Standard Oil Co. has been awarded contract for road oil.

**Clifton, N. J.**—The Union Building & Const. Co. has been awarded contract for grading Central Ave.

**Newark, N. J.**—For paving Margaretta St. from Amsterdam to Ave. L and Niagara St. from Berlin to Amsterdam St., to Glenfield Construction Co., at \$6,089 and \$7,721 respectively.

**Trenton, N. J.**—For 30,380 sq. yds. bituminous concrete on macadam foundation and 33,790 cu. yds. excavation to Newton Paving Co., Newton, at 73c per sq. yd. for paving and .439 per yd. for excavation. Total bid, \$73,244.74.

**Buffalo, N. Y.**—By Board of Public Works, contract for paving Robinson St. and Runbold Ave., to Louis H. Gipp, Buffalo, at \$39,189.

**Oswego, N. Y.**—Following contracts have been awarded for constructing about 4,000 sq. yds. of vitrified brick pavement to J. A. Calkin, Oswego, at \$13,458, and for resurfacing 8,500 sq. yds. of old sheet asphalt pavement with vitrified brick to Samuel Bonn, Syracuse, at \$18,409.

**Port Jervis, N. Y.**—For construction of 6,900 sq. yds. brick pavement on concrete foundation and 2,600 cu. yds. excavation to Port Jervis Const. Co. Port Jervis, N. Y., at \$2.25 per sq. yd. and 55 cts. for excavation; total bid, \$18,126.50.

**Greensboro, N. C.**—Commissioners of Greensboro have awarded to R. G. Lassiter, of Oxford, contract for laying approximately 75,000 sq. yds. of paving, cost to be \$87,350. Of this total amount, 65,000 yds. will be city paving, while remainder, 9,500 yds. will be laid between rails of street car lines traversing streets that are to be paved. Cost of latter work will be something over \$12,000, leaving total of \$75,000 to be borne by city. Paving will be of Mexican oil asphalt, laid on concrete or old macadam base, and cost per sq. yd. of asphalt will be \$1.50.

**Marshall, N. C.**—By Madison County highway commission for grading 6.9 miles of road to Berry Fortune Construction Co., Augusta, Ga., at following bid: 73,550 cu. yds. excavating, 39 $\frac{1}{2}$  c.; 350 cu. yds. concrete for small culverts, \$8.50; 2,400 lbs. plain twisted steel bars, 2 $\frac{1}{2}$  c.; 650 ft. 12-in. tile, haul and lay, 20c.; 570 ft. 15-in., 22c.; 300 ft. 18-in., 30c.; 150 ft. 24-in., 41c.; 80 cu. yds. c. r. masonry headwalls, \$4.90; 150 cu. yds. riprap, J. B. Clingman is county road engineer.

**Barberton, O.**—For paving Hopocan Ave. by board public service to Paul & Henry, of Barberton, as follows: 2,343 cu. yds. excavating, 25c.; 7,552 sq. yds. paving block, 73c. to 76c. per sq. yd.; 7,552 sq. yds. concrete base 1:3:5 6-in., 50c.; 7,552 sq. yds. sand cushion, 2-in., 5c.; 7,552 sq. yds. lay and roll blocks, 12c.; 16 lin. ft. concrete curb 6x22 in., 30c.; 322 lin. ft. concrete curb circles, 60c.; 2,952 lin. ft. concrete curb and gut-

ter, 44c.; 360 lin. ft. rough curb headers, 25c.; 322 lin. ft. galvanized steel corner bars, 21c.; 3,290 lin. ft. elastic expansion joint, 10c.; 5 manhole covers, reset, each, \$1; 7,552 sq. yds. cement fill, 10c.; total, \$13,566.

**Coshocton, O.**—For 13,545 sq. yds. brick paving on 8-in. gravel foundation and 7,830 cu. yds. earth excavation following contracts have been awarded: Geo. J. Bock & Son, Coshocton, O., 84 cts. per sq. yd. paving and 20 cts. excavation per cu. yd. Total, \$3,773. Also to same firm, 84 cts. for paving and 20 cts. excavation; total, \$6,714. To Rosser, Harper & Stuart, Bremen, O., at 83 cts. for paving and 25 cts. for excavation; total, \$8,587.40.

**Sandusky, O.**—The bid of Fred R. Jones Company, Cleveland contracting firm, was accepted by commissioners and work of new section of Main Market road No. 12 and short strip between Old Woman's creek and Huron village will begin soon.

**Urbana, O.**—Contract for paving Scioto St., from Kenton St. to Patrick Ave., with sheet asphalt, has been awarded to the Johnson Construction Co., of Chicago, upon its bid of \$22,833.

**Erie, Pa.**—For paving by city council as follows: Cranberry St. and Washington Pl. to J. & M. Doyle, at \$15,700, and for 9th and 10th Sts., to John McCormick, at \$20,500.

**Uniontown, Pa.**—For tarvia bound macadam on stone foundation, following bids have been received: Reagan-Lynch & Co., Uniontown, Pa., \$28,000; Jack Austin, Smock, Pa., \$18,721.34, and Crossan Const. Co., Brownsville, Pa., \$27,281.78.

**Yankton, S. D.**—For construction of 3,520 sq. yds. concrete pavement and 395 cu. yds. earth excavation to M. L. Flinn Paving Co., Sioux City, Ia., at \$1.45 per sq. yd. J. W. Summers is City Aud.

**Galveston, Tex.**—For furnishing approximately 3,000 cu. yds. of mudshell for completing Texas City cut-off road to junction with Texas Ave. in Texas City, Suderman & Dolson bid \$1.22 per cu. yd.; P. Freund, \$1.24; W. D. Haden, \$1.32; Hanson's Sons, Ind., \$1.06. Contract was awarded to Hanson's Sons, the lowest bidders.

**Ogden, Utah.**—The J. P. O'Neill Construction Co. has been awarded contract for curb and gutter building in district 114, embracing Washington Ave., between 2d and 12th Sts., for \$12,407.94, and also contract for curb and gutter in district 115, embracing 24th St., between Van Buren and Harrison Aves., at cost of \$1,536.92.

**Centralia, Wash.**—T. B. Bidwell has been awarded contract by Lewis County Commissioners for paving a mile and a half of road in vicinity of Curtis. His bid was \$9,724.

**Seattle, Wash.**—For grading 44th avenue, south, to Quigg Const. Co., at \$21,396; for concrete walks on Day street to Baisden Bros., at \$4,811.22; for grading 12th avenue, N. W., to McGuire Bros., at \$6,573; for grading 45th avenue, N. E., to Colasuedo & Co., at \$38,959.35, and for paving 35th avenue, south, to V. Ramaglia, at \$15,561.50.

**Superior, Wis.**—City Commission has awarded contract to S. A. Riches for paving of Tower Ave. from 58th St. to 64th St. The South End St. will be improved with concrete. Riches' bid, \$22,071.53, was low.

## SEWERAGE

**Mesa, Ariz.**—Election will be held May 18 to vote on question of issuing sewer system bonds in sum of \$75,000.

**Stockton, Cal.**—Plans are being made for new sanitary sewer system. Bonds in sum of \$350,000 will probably be floated in order to install same.

**Stockton, Cal.**—City Council has passed resolutions directing H. T. Compton, city engineer, to furnish plans and estimates of cost of installing storm-water sewer for city and also for sanitary sewer system, including main sewer, outfall sewer and disposal works.

**Tampa, Fla.**—Election will be held shortly to vote on \$250,000 bond issue for additional sewer work.

**Tampa, Fla.**—Ordinance has been introduced in City Council providing that election be called to vote on issuance of sanitary sewer bonds in sum of \$250,000.

**South Bend, Ind.**—Bids will be received by Dept. of Public Works up to 10 a. m., May 15, for construction of trunk sewer on Michigan St. from La Salle Ave. to Monroe St. Approximate length of sewer, 1,000 ft. of 60-in. sewer; 1,518 ft. of 54-in. sewer; 452 ft. of 48-in. sewer, approximate depth 20 ft. Veronica C. Sweeney is Clerk of Board.

**South Bend, Ind.**—About June 1 Board of Works expects to start work on construction of new trunk sewer on Michigan street from LaSalle avenue to Monroe street. Resolution was adopted by Board of Works and bids ordered. Contract will be let about May 15. Resolutions for pipe sewer on Dale avenue, from Dubail street to Dayton street and for pavement on Feurbringer street, from Sherman avenue to Cottage Grove avenue have been adopted.

**Mt. Air, Ia.**—N. T. Archer & Co., Kansas City, Mo., are preparing plans for proposed sewer system.

**Waterloo, Ia.**—City Engineer Roby has been making careful investigation of plans for proposed extension of the sewerage system to Westfield.

**Paducah, Ky.**—City will advertise at early date for proposals covering the construction of section 1 of the Third District Sewerage system. Funds for the work are in hand and contract drawings will be completed shortly. L. A. Washington is Commissioner of Public Works.

**Haverhill, Mass.**—Order has been passed authorizing construction of sewer in Groveland St., to cost \$8,500.

**Milford, Mass.**—Milford Sewer Commissioners have received request from citizens representing property owners in neighborhood, asking for construction of sewer on Winter street, from Granite street to Lincoln street and matter will be put up to Engineer F. A. Barbour to get at facts in respect to cost and other plans.

**St. Louis, Mo.**—Ordinances have been passed for construction of sewers in various streets.

**Grand Island, Neb.**—Committee on sewers has been instructed to look about for competent engineers with view of securing plans and specifications for \$100,000 sewer proposition favored at last election, such plans and specifications being necessary before bond election can be held.

**Atlantic City, N. J.**—Ventnor city council has passed ordinance authorizing purchase of land from Martha Marsh and others, on which sewerage system and disposal plant is to be built. Consideration named was \$9,250, of which \$5,000 is to be paid immediately and balance later.

**Bridgeton, N. J.**—Purchase of two pumps for Glass St. sewage disposal plant has been ordered.

**Binghamton, N. Y.**—Meeting of committee on sewers and sewerage of Common Council will be held for purpose of considering Brandywine creek sewer proposition. Alderman James R. Watson has introduced ordinance declaring intention of Council to construct a trunk sewer. This ordinance, however, cannot be presented or become operative until money is available. As sewer will cost in neighborhood of \$139,000, it will require a bond issue, and sewer bond issue limit already having been reached, the Council has been reluctant to call another bonding election on bonds which cannot be issued until present limit on sewers is increased or some of present sewer bonds redeemed.

**Brooklyn, N. Y.**—See "Streets and Roads."

**Oswego, N. Y.**—City will receive bids on April 30 for about 11,000 lin. ft. of 8 and 10-in. sanitary sewers.

**Syracuse, N. Y.**—The purification plant of Syracuse Point, on Onondaga lake, occupying sewer system, will be located at Lakeview about eighty acres of land.

**Cincinnati, O.**—Plan has been prepared for sewerage Beresford Ave., between Gilbert Ave. and Mathers St.

**Piqua, O.**—See "Streets and Roads."

**Salem, O.**—Sewer committee has recommended construction of sanitary sewer on Sharp St., between Wilson and Prospect Sts.

**Salem, O.**—Service Director has been instructed by City Council to prepare estimates for three storm water sewers and present same at next meeting of Council.

**Johnstown, Pa.**—Johnstown's preliminary plans for construction of sanitary sewer system and sewage disposal plant have been approved by State. City has been ordered to proceed with preparation of detail plans.

**Greenville, S. C.**—See "Streets and Roads."

**Howard, S. D.**—Election has resulted in favor of issuing sewerage system bonds in sum of \$24,000. J. B. Edkin is city auditor.

**Temple, Tex.**—Ten thousand dollars will be expended at once in extensions to sanitary sewer service owned and operated by city, which will result in including large and thickly settled sec-

tion within sewer districts. Work is to be commenced immediately and will be paid for partly out of earnings of plant.

**Chehalis, Wash.**—City Council is considering construction of concrete sewer in southern section of city, to cost about \$60,000.

**Spokane, Wash.**—City council has been petitioned to construct sewers in alleys between Fairview and Frederick Aves. Estimated cost \$12,000.

**Milwaukee, Wis.**—Sewerage Commission will readvertise for bids on construction of intercepting sewer along Milwaukee River because Jones & Erbeck, of Pittsburgh, lowest bidders, have not qualified by filing bond in sum of fourth of contract price, \$282,594.58.

#### CONTRACTS AWARDED.

**Maywood, Ill.**—To Tonkawa Construction Co., Kansas City, Mo., at \$85,000, for construction of 2½ miles of concrete and vitrified pipe outlet sewer and 5½ miles of 12-in. and 15-in. lateral sewers.

**Crawfordsville, Ind.**—For construction of vitrified tile sewer (5,425 ft. of 8") to Nolan & Johnston, Crawfordsville, Ind., at \$6,499.46.

**Evansville, Ind.**—For sewer construction contract has been awarded to Dowery & Barriack at following bid: 664 ft. 30-in. vitrified stone pipe at \$2.64 per ft.; 660 ft. 24-in. pipe at \$1.12; 690 ft. 18-in. pipe at 67½ cts.; 5 manholes at \$20; 18 inlets at \$29; total amount, \$3,579.91. E. N. Frisse, Secy. of Bd. of Public Works.

**Davenport, Ia.**—For construction of 365 ft. 8-in. vitrified sewer pipe and 790 ft. 10-in. pipe to D. E. Keeler Co., Davenport, Ia., at total bid of \$925.25.

**Baltimore, Md.**—Following are bids on Sanitary Contract No. 149, Sec. No. 1, Gwynn's Falls interceptor: Jas. Ferry & Sons, \$26,816.50; M. O'Herron & Sons, \$27,125.55; Thos. Hampton, \$29,775.95; Smith & Ruggles, \$29,841.03; Whiting-Tarnst Const. Co., \$30,003.51; Ryan & Reilly, \$32,535; A. T. Carozza & Co., \$35,214.55; John A. Clark, \$44,322. Contract was awarded to Jas. Ferry & Sons. C. W. Hendrix is chief engineer.

**Fitchburg, Mass.**—By Board of Sewage Disposal Commissioners, for constructing Sec. 7 of main intercepting sewer, to Joseph Long & Co., Leominster, at \$12,099. Other bidders were: F. A. Gammino, Providence, R. I. \$14,065; D'Onfro Bros., Leominster, \$15,688; Ralph E. Bull, \$16,931.

**Lowell, Mass.**—It has been stated at purchasing agent's office that Edward Cawley had been awarded the contract for 3,000 feet, more or less, of sewer pipe. His bid on the two-foot lengths was 77% off the list and on three-foot lengths 76%. E. A. Wilson & Co. bid 75½% off on both lengths. There were only two bidders. Doherty Brothers were awarded contract for sewer castings. Their bid was \$1.50 per hundred pounds. The Sessions Foundry Company bid \$1.54 a hundred, and the City Iron Foundry, 2¼ cents a pound.

**Lynn, Mass.**—Contract for building of Marshall brook outfall has been awarded by Board of Health to James T. Lyons of Swampscott for \$689.45.

**Cleveland, Ohio.**—For construction of sewer in Waterloo Rd., W. E., to Amata Construction Co., at \$13,550.

**Coshocton, O.**—For construction of 8-in. terra cotta sewer to John Hall, Coshocton, O., at 39 cts. Total bid, \$563.72.

**Salem, O.**—Contract for construction of intercepting sanitary sewer on McKinley avenue, has been awarded to Central Ohio Construction Co.

**Madison, Wis.**—Contracts for constructing sewers in Fair Oaks district, to J. T. Blake, at \$39,800; Sweeney Bros., at \$31,500, and the Pastoret Construction Co., at \$8,197.

**Niagara Falls, Ont., Can.**—The Frontier Contracting Co. of this city has been awarded contracts for installation of sewage system at Dunnville. Job will involve between \$4,000 and \$5,000.

#### WATER SUPPLY

**Northport, Ala.**—Election will be held May 17 to vote on question of issuing water works bonds in sum of \$16,000.

**East San Diego, Cal.**—Election will be held May 4 to vote on question of issuing water system bonds in sum of \$70,000.

**San Diego, Cal.**—New 16-in. main will be installed to be connected with new Bonita pipe line at 32d and Broadway.

**Washington, D. C.**—Supplementing Foreign Trade Opportunity No. 13,886 which appeared in Daily Consular and Trade Reports September 29, 1914, the American consular officer at Athens,

Greece, reports an extension of time for bids for water supply and sewerage system for cities of Athens and Piraeus, which bids were to have been opened in Athens on April 12, 1915. The Ministry of Communications now announces that date for the submission of offers has been extended three months. Plans, drawings, specifications, etc., may be examined at the Bureau of Foreign and Domestic Commerce or its branch offices. No. 16,538 Bureau of Manufactures.

**Terrill, Ia.**—Petition is being circulated asking that election be called to vote on question of issuing water works system bonds in sum of \$8,500.

**Waterloo, Ia.**—City Engineer C. A. Roby has agreed to make plans and estimate cost of laying pipe line which will convey city water into Byrnes Park.

**Harrodsburg, Ky.**—Dr. R. P. Curry, state sanitary engineer, of Bowling Green, is here in consultation with committee of citizens appointed to investigate best source of supply for improved water system for Harrodsburg.

**Louisville, Ky.**—Bids for 71 fire hydrants at various points throughout city have been opened by Board of Public Works. There were only two bidders, J. W. Strackbein, of Chicago, and Edwin S. Larson, of Louisville. The former is lowest on fifteen and the latter on fifty-six.

**Haverhill, Mass.**—City Council has passed bond order for extension of high pressure water service.

**Mansfield, Mass.**—Water commissioners authorized by board of trade have presented petition to legislature asking for permissive legislation to issue bonds of \$25,000 to complete started improvements of Mansfield water district plant and service.

**Atlantic City, N. J.**—On suggestion of Engineer Van Gildner, commissioners have authorized contractor building new reservoir at Absecon to take steps to protect wood stave main between reservoir and pumping station in Absecon. This will be done at cost of \$800, which was included in original estimate for this project.

**Totowa, N. J.**—Notice is given of intention of council of Borough of Totowa to submit question of construction of water supply plant to voters of borough at special election to be held on June 21, 1915. Lynden Redman is borough clerk.

**Albany, N. Y.**—Ordinance has been passed authorizing bond issue of \$100,000 for extension of waterworks system.

**Dunkirk, N. Y.**—At last meeting of Board of Water Commissioners board passed favorably on recommendations of Supt. W. O. Peck for relaying of certain water mains involving expenditure of several thousand dollars. Bids are being obtained by Superintendent Peck which will be submitted to board at its May meeting.

**Ilion, N. Y.**—Proposition to raise \$81,000 for larger water supply has been favorably voted on.

**Harrisburg, Pa.**—Following is lowest bid received for laying pipe, setting valves and hydrants and placing brick work. Material furnished by Water Department. M. F. Saul, Harrisburg, Pa., 690 ft. of 6-in. pipe at 22½¢ per ft., and 55¢ each valves; 750 ft. 8-in. pipe, 29¢ per ft., and \$1.25 each valve; 362 ft. 6-in., 21½¢ per ft., and 55¢ each valve; also 99¢ for setting fire hydrants; total bid, \$504.98. Other bidder was H. W. Johnson, Harrisburg, Pa., at \$541.14. H. F. Bowman, Supt. Public Safety.

**Knoxville, Tenn.**—The expenditure of not less than \$500,000 on improvements in Knoxville water system is advocated by J. H. Howland, engineer of committee on fire prevention of National Board of Fire Underwriters.

**Temple, Tex.**—A \$25,000 dam for waterworks at Leon River will be commenced shortly.

**Ogden, Utah.**—Following are bids to be considered for trenching and laying Matheson joint pipe for artesian wells pipe line: Green Construction Co., Tooele, Utah, \$23,117.40; Corey-Taylor Con. Co., Ogden, Utah, \$34,109.80; P. J. Moran Co., Salt Lake City, \$26,684.20; Lyman & Samuels, Salt Lake City, \$30,645.60; Smith & Spragins, \$27,844.40; Wheelwright Construction Co., Ogden, Utah, \$37,971; J. P. O'Neill Construction Co., Ogden, Utah, \$35,454; Houser, Sim & Vorkink, Salt Lake City, \$35,497. Bids for furnishing and laying 36-in. wood-stave pipe for artesian wells pipe line are as follows: Portland Wood Pipe Co., Portland, Ore., \$16,667.50; Corey-Taylor Construction Co., Ogden, Utah, \$16,837; Owens & Gray, Salt Lake, \$16,611; Pacific Pipe & Tank Co., Portland, Ore., \$17,289; Red-



wood Manufacturers Co., San Francisco, Cal. ....; Wheelwright Construction Co., Ogden, \$16,498; J. P. O'Neill Construction Co., Ogden, \$16,950; Washington Pipe & Foundry Co., Tacoma, Wash., \$15,368; P. J. Moran, Salt Lake City, \$17,854.

**Salt Lake City, Utah.**—Special bids may be asked for laying of 12-in. supply main from 13 E. relief tank to Fifth Ave. and L St.

**Wheeling, W. Va.**—Council has passed bond ordinance providing for installation of Smith Slow Sand Filter System. By this action ordinance goes to voters for final passage or rejection, May 15, 1915, and allows for passing of ordinance that will bond the city for \$640,000.

**Roslyn, Wash.**—By vote of 215 to 70 city has authorized issuance of \$25,000 for purpose of extending its present gravity water system. Before this extension can be made, however, right to creek sought must be secured from United States reclamation service, which has withdrawn stream from appropriation.

**Chatham, N. B.**—Town has asked legislative authority to issue water extension bonds in sum of \$26,000.

#### CONTRACTS AWARDED.

**Notasulga, Ala.**—Contract to B. F. Roberts, Macon, Ga., at \$10,474, for constructing water system.

**Stronghurst, Ill.**—Board Local Improvement to T. H. Iglehart of Chicago to furnish material and construct system of c. i. water pipe with hydrants, valves and valve boxes at a total of \$10,373.

**East New Market, Md.**—Lowest bid received for furnishing and laying water mains was received from E. L. Jones, Dover, Del., at total bid of \$5,194.20.

**Duluth, Minn.**—For construction of concrete reservoir of 1,000,000 gal. capacity to D. H. Clough, at \$12,985. A. A. Reed is Mgr. Water and Light Dept.

**Chillicothe, Mo.**—Board of Public Works has awarded contracts for the material, equipment, improvements, etc., for Chillicothe's municipal water plant. The contracts are as follows: For construction of the settling basin, coagulating basin, concrete work for filter plant, there were five bidders. The estimate of Harper & Stiles, the engineers, was \$16,486. Contract was awarded to the F. D. Martin Construction Co. of Kansas City, Mo., for \$13,775.50. Bids were also received from five bidders for furnishing the mechanical equipment for filter plant of 1,035,000 gallons capacity per day. The engineers' estimate for a plant of this size was \$9,000. The contract was awarded to Pittsburgh Filter Mfg. Co., of Pittsburgh, Pa., for plant of 1,210,000 gallons capacity, 16 per cent. larger than the original plan, for sum of \$9,034. Bids were received for furnishing the pumps and motors, two pumps to be placed at river and three at the electric light plant. There were seven bidders. Engineers' estimate was \$4,450. Contract was awarded to Thermal Efficiency Co., of Kansas City, Mo., for De Laval pumps and G. E. motors, for \$3,597. These pumps are 25 per cent. larger than were figured on in the original estimates.

**Clyde Park, Mont.**—Seven bids were presented to town council at special meeting night for building of Clyde Park waterworks system. Contract was awarded to McLaughlin & O'Neill, of Livingston, whose bid was \$15,318. Specifications call for completion of plant on or before August 1, 1915. Bids presented were as follows: D. Dreier, Livingston, \$15,298; McLaughlin & O'Neill, Livingston, \$15,318; R. M. Bardson & Co., Butte, \$15,450; Lindstrom & Oren, Billings, \$15,475; Municipal Equipment Co., Spokane, \$15,528.70; C. A. Yost, Clyde Park, \$15,743; Security Bridge Co., Billings, \$20,750.

**Fordyce, Neb.**—For furnishing and laying water mains to Alamo Const. Co., Omaha, Neb., at following bid: 2,523 ft. 6-in. pipe at 73 cts. per ft., and 3,613 ft. 4-in. at 56 cts. per ft. Total bid \$3,319.50. L. S. Wise is Village Clerk.

**Kannapolis, N. C.**—To C. Thompson & Bros., Charlotte, to construct filtration plant.

**Oxford, O.**—For furnishing and laying 2,000 ft. 4-in. C. I. pipe and 1,750 ft. 1-in. steel pipe, 3 valves, 2 fire hydrants, following bids were received: John L. Walker Co., Hamilton, O., \$1,999.50; Peak & Baker, Oxford, O., \$1,793.25; Thomas Canary, Cincinnati, O., \$2,057, and Thomas Daly, Cincinnati, O., \$2,500.

**Eugene, Ore.**—Guy Pyle, of Eugene, has been awarded contract to do con-

crete work on Eugene's new 2,500,000-gallon water reservoir on College Hill.

**Oregon City, Ore.**—For construction of South Fork pipe line to furnish water to Oregon City and West Linn, J. W. Moffatt, of Oregon Eng. & Constr. Co. Cost of line about \$286,765.

**Houston, Tex.**—To Charles S. Basham, Houston, at \$5,462 each for concrete water tanks.

**Ogden, Utah.**—Board has awarded contract for 17,250 ft. of 24-in. Matheson joint pipe f. o. b. Ogden to the George A. Lowe Co., of Ogden, at rate of \$284.35 per 100 ft., total amount being \$49,050.38. This pipe will be laid from Coldwater canyon connection to point about 3 miles east. Wood-stave pipe 36 ins. in diameter will be laid from end of iron pipe to wells, a distance of about two miles.

**Ogden, Utah.**—On recommendation of city engineer board of city commissioners have awarded contract for excavating pipe trench for artesian wells water system extension to Green Construction Co., of Tooele, at \$23,117.40. The Portland Wood Pipe Co. was given contract to furnish California redwood stave pipe at cost of \$18,080.

**Madison, Wis.**—By Board of Public Works to John T. Blake, Madison, at \$39,000, for laying c. i. water mains.

**Milwaukee, Wis.**—The department of public works will enter into contract with F. H. Nakielski for construction of lake shore tunnel for water department to connect Linwood Ave. intake tunnel and Nort Point pumping station. His bid, lowest of six, was \$34.92 per lin. ft. Tunnel will be 5,600 ft. long. It will be 9 ft. in diameter. Months of labor will be required to build it. Lowest bid was under the city's estimate of \$40 per ft.

**Laramie, Wyo.**—For constructing five miles pipe line to J. S. Schwartz, of Colorado Springs, Colo., at \$6,410. Z. E. Seiverson is City Engr.

#### LIGHTING AND POWER

**Charleston, Ark.**—Business men of Charleston and Branch have each named committee of five to investigate proposition placed before them by Booneville Electric Co. to supply Booneville and Branch with electricity for light and power.

**South Pasadena, Cal.**—City trustees will, at early date, and in behalf of city of South Pasadena, call for bids on proposed ornamental lighting system on Huntington Drive and Fair Oaks Ave. City's contract with Pacific Light & Power Co., now supplying electricity for lighting of street sections named, will expire in June, and by that time ornamental light posts will be installed and ready for use.

**La Junta, Colo.**—Election has resulted in favor of issuing municipal light plant bonds in sum of \$75,000. S. W. Brown is City Clk.

**Thomasville, Ga.**—City is looking into ornamental street lighting. D. R. Pringle is Supt.

**Brookstown, Ind.**—Installation of electric lighting system is said to be under consideration. It is proposed to purchase electricity to operate same.

**Elwood, Ind.**—Petition asking for extension of Cluster light service for South Anderson street, south from B street to Lake Erie Railroad, has been prepared by property owners along street and will be acted upon by city council.

**New Orleans, La.**—Preparations are under way here for bond issue to build municipal light and power plant which will manufacture 3-cent electricity for city. Engineers from Cleveland have been here making estimates, and they have declared plant valued at \$5,000,000 or \$6,000,000 will be sufficient to supply all demands of city. It is probable that a \$3,000,000 plant will be built first.

**Chicopee, Mass.**—The order introduced at last meeting of board authorizing expenditure of \$1,200 for ornamental electric lights for Main St. in Falls has passed its second and final reading.

**Bay City, Mich.**—At last meeting of electric light committee it was decided to purchase auxiliary blower engine for city lighting plant, on South Henry St.

**Dowagiac, Mich.**—Electric light bonds in sum of \$12,000 will be sold for installation of new electric light system at water works station.

**Staples, Minn.**—Water and light commission is considering installation of new street lighting system to consist of about 85 lamps.

**Brunswick, Mo.**—Installation of ornamental lighting system in business district is being considered by council. L. E. Merrill is city clerk.

**Perth Amboy, N. J.**—Bids will be received until 4 p. m., May 3, 1915, by J. A. Rhodes, city treasurer, at office of city treasurer, Perth Amboy, N. J., for purchase of \$150,000 4½ per cent Coupon Municipal Light, Heat and Power Plant Bonds. J. A. Rhodes is city treasurer.

**Oswego, N. Y.**—Governor of state has signed legislature bill creating a public service commission for development of a municipal hydro-electric plant.

**Schenectady, N. Y.**—The city law department has taken matter of new lighting contract under advisement and draft of proposed contract will be soon prepared and submitted to Board of Contract and Supply.

**Hamilton, O.**—Extension of cluster lighting system is being considered.

**Philadelphia, Pa.**—The Welsbach Street Lighting Co. of America submitted only bid for gasoline lighting of city streets during 1916.

**Freeport, Tex.**—City council is considering extension of street lighting system to cover residential section. Ornamental lamps have been erected in business portion.

**Montpelier, Vt.**—The lighting committee of city council is considering question of better lighting facilities for the city.

**Moorecroft, Wyo.**—Town council will submit proposal to issue bonds for installation of electric lighting system to voters at spring election.

**Kamloops, B. C.**—Plans are being prepared by DuCane, Dutcher & Co., 470 Granville St., Vancouver, for extensions to electric lighting system at estimated cost of \$50,000. J. J. Carment is Clk.

#### CONTRACTS AWARDED.

**Galesburg, Ill.**—For installation of ornamental lighting system in business district to H. H. Guenther, of Galesburg, for \$9,080.

**Urbana, Ia.**—By city council contract for installation of ornamental lamps on three blocks to Standard Electric Co., of Waterloo.

**Spring Lake, N. J.**—Council has awarded a split lighting contract, a section for electric lighting going to the Point Pleasant Electric Light & Power Company and the gas lighting to the Coast Gas Company of Belmar.

**Seattle, Wash.**—By Gas Service Corporation of America contract for construction of two gas plants, one at Montesano and other at Bremerton, to Burnett Construction Co., at total of \$150,000.

**Gillette, Wyo.**—Bids for construction of electric light plant for this town have been opened. There were nine bids submitted. That of Hendrie & Bolthoff, of Denver, of \$5,670, was accepted.

#### FIRE EQUIPMENT

**Keokuk, Ia.**—Purchase of a motor truck for fire department is being considered.

**Pittsfield, Mass.**—The city fire department committee have opened bids on four different pieces of fire apparatus. After being in session three hours and 15 minutes, it was voted to buy \$11,000 worth of apparatus, but no decision was reached as to apparatus to be bought. All bids were thrown out on tractors and hose wagons. It is possible that a combination chemical and a city service truck, both motor driven, or two combination chemicals will be bought, as well as second-hand automobile.

**Salem, Mass.**—City council will purchase motor ladder truck to be located in engine 4 house.

**Flint, Mich.**—Recommendation of several purchases for fire department has been made in report of fire department committee of common council and approved. City clerk was authorized to solicit bids on 2,000 ft. of fire hose, the bids to be received until April 30.

**Kalamazoo, Mich.**—Fire Chief Russell will ask city for appropriation of \$70,000 for maintenance of his department. He will also ask for additional \$15,000 for purchase of two combination motors and tractor engine.

**Anaconda, Mont.**—Matter of purchase of new fire truck for city was before city council and bids were opened and referred to special committee consisting of fire committee, Aldermen Kell, Tierney and Corrigan with the addition of Aldermen Wellcome and Dalton and Fire Chief Collins to consider bids made and report to council. The bidders were: Willys Utility, f. o. b., Dunkirk, \$3,100; Northwestern Fire Apparatus Federal Truck,

\$2,985, f. o. b. Anaconda; Knox Combination, f. o. b. Anaconda, \$4,950; Service Motor Car Co., two styles, \$4,000 and \$5,500, f. o. b. Wabash; Kissel Kar, f. o. b. Anaconda, \$5,565; Seagraves Co., two styles, at \$5,400 and \$6,000; Signal Worm Drive model H L, \$3,575; Winton Six, two styles, f. o. b. Cleveland, at \$4,250 and \$4,550; La France, five styles, f. o. b. Anaconda, \$4,130, \$3,430, \$4,500, \$5,200 and \$5,700; Fargo Fire Engine Co., four types, f. o. b. Philadelphia, \$3,650, \$5,000, \$5,500 and \$6,000.

**Caldwell, N. J.**—City is contemplating purchasing combination chemical and hose wagon.

**Albion, N. Y.**—Vote to buy a 55-ft. aerial hook and ladder truck to cost \$3,800 has been carried at tax meeting.

**Avon, N. Y.**—Farmers in this section are in favor of a motor truck to replace the horse-drawn chemical engine. Plan is to buy a triple combination motor-driven fire truck. Plans call for a powerful pump of at least 800 gallons capacity per minute, the whole outfit to cost between \$8,000 and \$10,000.

**Goshen, N. Y.**—About 500 ft. of fire hose will be purchased.

**Rome, N. Y.**—Two pieces of auto fire apparatus will be purchased, a combination pumping engine and hose car and combination chemical engine and hose car, also 2,000 ft. of hose.

**Syracuse, N. Y.**—Board has rejected bids for fire hose recently received, and new bids will be submitted. The specifications call for 2,000 to 6,000 feet.

**White Plains, N. Y.**—At meeting of Board of Fire Commissioners bids submitted for erection of new fire house for East Side Hose Company, at Warren street and Terrace avenue, were considered and contract was awarded to Fallace Brothers, of Mamaroneck, for \$11,703.00.

**Piqua, O.**—Purchase of motive fire truck has been authorized to cost about \$10,000.

**Oregon City, Ore.**—Fire Chief Frost has made recommendation that city purchase 1,000 ft. of new hose to replace hose found defective.

**Harrisburg, Pa.**—Proposals for furnishing annual supply of fire hose have been opened by Commissioner Taylor, but he has not yet decided upon his recommendation to council. Following were received: American La France Fire Engine Co., two kinds at 80c., one at 70c.; Empire Rubber & Tire Co., 88c. and 52c.; Fabric Fire Hose Co., \$1.10, \$1.90c., 80c. and 70c.; Eureka Fire Hose Co., \$1.10, \$1.80c. and 70c.; Harry F. Sheesley, Goodrich, 70c. and 62c., or 2,650 ft. of 70c. quality or 3,000 ft. of the 62c. quality for \$1,850; C. C. C. Fire Hose & Rubber Co., two of the \$1 quality and one of the 90c. kind; Boston Woven Hose & Rubber Co., Gilbert & Son, agents, two at 81c., one 70c. and one 65c.; Bi-Lateral Fire Hose Co., Gilbert & Son, two at \$1.10, two at 95c., one at 90c. and one at \$1.10; U. G. Rubber Manufacturing Co., 87c., 85c., 70c. and 62½c.; Keystone Fire Supply Co., W. V. Keller, agents, 55c. and 66c.; Republic Rubber Co., 70c.; Voorhees Rubber Co., 85c. and 80c.

**Pittsburgh, Pa.**—Pittsburgh city council has authorized Safety Director Chas. B. Hubbard to install in all engine houses of city motorcycles equipped with fire extinguishers. Two or three men in each hose house will be instructed in operation of motorcycle and will be put through tests to demonstrate their abilities. The motorcycle squad will attend to still alarms and to emergency calls. It is expected cycle corps will soon prove its efficiency and show saving to the department. Council has authorized director to buy motorcycles for large squad of patrolmen who until recently were of mounted squad. The city dispensed with horses, except a few that are kept in downtown section. The boulevards, parks and speedways will be thoroughly patrolled.

**Uniontown, Pa.**—Burgess has approved ordinance providing for issuance of motor fire apparatus bonds in sum of \$20,000.

**Titusville, Pa.**—City clerk will advertise for 1,000 ft. of fire hose.

**Petersburg, Va.**—Purchase of automobile fire engine is being considered.

**Chippewa Falls, Wis.**—Resolution has been adopted for purchase of 500 ft. of hose for fire department.

#### CONTRACTS AWARDED.

**Pensacola, Fla.**—By city for motor fire truck, type 12, to American LaFrance Fire Engine Co., Elmira, N. Y., at \$6,000.

**Clinton, Ia.**—Council has approved of contract awarded to American-La France Co., Elmira, N. Y., for new fire hose wagon for central station.

**Jersey City, N. J.**—To Gamewell Fire Alarm Telegraph Co., Newton Upper Falls, Mass., for furnishing 50 fire alarm boxes at \$75, and 35 police signal boxes at \$120.

**Canandaigua, N. Y.**—To B. F. Goodrich Co., Akron, O., and Empire Rubber & Tire Co., Trenton, N. J., each for 500 ft. of hose.

**Syracuse, N. Y.**—Contract for apparatus needed to complete new fire alarm and telegraph system has been let to Star Electric Company of Binghamton by Board of Contract and Supply. The contract provides that apparatus shall be furnished at rate of \$65 per box, including all necessary equipment.

**Newport, R. I.**—To American-La France Fire Engine Co., Inc., Elmira, N. Y., for furnishing seven pieces of motor apparatus, at \$44,450.

#### BRIDGES

**Council Bluffs, Ia.**—Board of supervisors of Pottawattamie County has passed resolutions of necessity for five county bridges which will entail expenditure of about \$18,000.

**Portland, Me.**—Bids for issue of \$250,000 worth of County of Cumberland bridge bonds are to be received by County Commissioners from now until Monday, May 3, at 2 p. m., when bids will be opened. This is first bond issue to raise money for construction of new bridge between Portland and South Portland. It will be followed later by another bond issue of about the same size.

**Lowell, Mass.**—At regular meeting of municipal council plans and estimates of cost for new reinforced concrete bridge over Merrimack River and northern canal at Pawtucket Falls were submitted by city engineer. Engineer estimates total cost for a 58-ft. bridge at \$80,000.

**Springfield, Mass.**—City should shortly be free to start erection of new Plainfield St. dry bridge to replace present narrow structure over Boston & Maine railroad. Fred H. Clark, superintendent of streets and engineering, will advertise for bids on structure within short time so that construction may start next month. Bridge is to be twice as wide as present one. The cost will approximate \$40,000, of which \$4,000 will be paid by Boston & Maine railroad and \$8,000 by the Springfield Street Railway Co.

**Maryville, Mo.**—Election has resulted in favor of issuing bridge bonds in sum of \$30,000.

**Matawan, N. J.**—Board chosen freeholders will receive bids at Freehold about June 1 for constructing drawbridge over Matawan Creek on Keyport and South Amboy Rd., to cost about \$40,000.

**Coeysmans, N. Y.**—Election will be held May 4 to vote on question of issuing bridge bonds in sum of \$7,000.

**Lackawanna, N. Y.**—Plans and specifications have been adopted by common council for Kirby and Center St. bridges at cost of \$13,000.

**Syracuse, N. Y.**—All proposals for building bridge over Onondaga creek at Spencer street has been rejected by Board of Contract and Supply and new proposals will be received. Under first advertisement proposals could be submitted on two alternative plans or according to plans of the contractor.

**Tiffin, O.**—County Commissioners are arranging to float another issue of bridge bonds to secure funds to take care of certain present indebtedness and also cost of constructing two bridges across Honey creek in Bloom township. Amount of issue decided upon is \$28,000. It is estimated that two new bridges will cost approximately \$10,000.

**Norristown, Pa.**—County commissioners have voted for construction of concrete bridge over Stony Creek at Stanbridge St., to cost about \$30,000.

**Knoxville, Tenn.**—A new concrete bridge across First Creek at Jackson Ave. may be considered by city of Knoxville, Park City and the Knoxville Railway & Light Co.

**Chesaw, Wash.**—County commissioners have voted new steel bridge for Riverside, crossing Okanogan River onto North Half territory. The citizens of Riverside will contribute \$1,000 to the structure.

#### CONTRACTS AWARDED.

**Illinois.**—By state highway commission for bridge in Massac County to W. H. Hoffman, Lafayette, Ind., at \$2,588, and bridge in Johnson County to Montgomery-Parker Co., Rockport, Ind., at \$2,353.

**Muncie, Ind.**—County commissioners have allowed bridge contracts as follows: Moffit bridge, over Bell Creek, in Salem Township, \$570; Summer bridge, over Bell Creek, in Salem Township, \$2,455; Abshire bridge, over Bell Creek, in Salem Township, \$2,675, and extension to Lesh bridge, over White River, in Liberty Township, \$3,375. The Indiana Bridge Co. was lowest bidder and received all contracts.

**Portland, Ind.**—Contracts for construction of fifteen concrete bridges and culverts have been awarded by county commissioners. P. B. Swihier, this city, will build new concrete bridge across Halfway Creek on Meridian St. at Redkey, at his bid of \$2,962. Bridge is 30 ft. wide and 80 ft. long. A bridge at Pennville will be repaired by Walter Swihier for \$3,640.

**New Brunswick, N. J.**—The East Jersey Contracting Co., of Perth Amboy, has been awarded contract at joint meeting of Middlesex and Somerset County boards of freeholders here for erection of concrete bridge over Green Brook at Dunellen. Each of counties will bear half of the expense of construction work. Contract price is \$5,935.80.

**Ballston Spa, N. Y.**—For new bridge to be erected on State road over Morning Kill Creek to Van Namee & Case of Horseheads, N. Y., at \$2,750.

**Pittsburgh, Pa.**—For construction of creosoted wood block floors for county bridges to Farris Eng. Co., Jenkins Arcade Bldg., Pittsburgh, at \$12,750. H. M. Cribbs is Co. Controller.

#### MISCELLANEOUS

**Fort Smith, Ark.**—Chamber of Commerce at Little Rock has made appropriation of \$50,000 for purpose of furthering river navigation between that point and Memphis. Funds will be used to build wharves and terminals.

**Alameda, Cal.**—Election, to have been held April 14, to vote on question of issuing harbor improvement bonds to the amount of \$200,000, has been postponed until May 11. R. E. Basshard is City Clerk.

**Dublin, Ga.**—Election will be held June 8 to vote on question of issuing ice plant and abattoir bonds in sum of \$50,000.

**Indianapolis, Ind.**—Bond issue of \$100,000 has been authorized by Council for purpose of continuing Pogues run drainage and track elevation work which is now in progress.

**Indianapolis, Ind.**—Board of works has adopted plans and specifications for two new engine houses that will be built, one at Sherman drive and new York St., and other at Shelby and Kelly Sts. Bids for erection of two houses will be advertised for within a short time.

**Waterloo, Ia.**—Sanitary drinking fountains will be installed soon at Byrnes park if plans now being considered by James Byrnes, park commissioner, are put into effect.

**Lenox, Mass.**—Board of Health will receive sealed proposals for collection and disposal of town garbage for year commencing June 1.

**Pascagoula, Miss.**—Common council has made an order for issuance of \$17,000 municipal improvement bonds for purchase of land on Pascagoula River for public wharves or docks.

**Newark, N. J.**—Common Council has adopted resolution providing for construction of new one-story market at cost of not more than \$636,000.

**Perth Amboy, N. J.**—Park site will be purchased of 14 acres, between Amboy avenue and Central Railroad tracks.

**Greensboro, N. C.**—Special election will be held June 1 to vote on question of issuing court house bonds in sum of \$250,000.

**Dayton, O.**—Hayden, Miller & Co. of Cleveland have decided to purchase \$45,000 bonds issued for purchase of equipment for garbage plant.

**Hamilton, O.**—New auto patrol will be purchased.

**Tiffin, O.**—Figures away below engineer's estimate characterized bids opened on excavation for and construction of concrete retaining wall to be built on Sandusky river, in center of city. Twenty-three bids were received on the work. Bids were asked on construction of three types of walls, 3,200 feet long. One is a gravity wall and the other two are reinforced concrete walls. In every item of the excavation and construction of the three walls the engineer's estimate is